Rachael M. Smith

The Relationship between Attachment Style, Perceived Quality of Life, and Deliberate Self Harm in Adolescence.

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ABSTRACT

Introduction / Objectives: One in every seven adolescents may engage in deliberate self harm (DSH). Despite the significant prevalence of DSH in this population; research into the risk factors associated with DSH in adolescence is still at an early stage. Knowledge about the antecedents of adolescent DSH is vital for preventative purposes and to inform clinical assessment and management. Attachment theory has provided a valuable framework for understanding risk and protective factors in the development of psychopathology. The concept of quality of life (QOL) also provides an encompassing theoretical framework in which to embed explanatory models of psychopathology. The aim of this exploratory study was to investigate whether the theoretical frameworks of attachment and QOL are useful for understanding DSH in adolescence, by exploring the relationship between DSH, attachment style and perceived QOL in this population.

Method / Design: A cross sectional between groups design was adopted. Group A consisted of twenty adolescents currently attending a mental health clinic who had engaged in DSH in the last year. Group B (control group) consisted of eighteen adolescents currently attending a mental health clinic with no past or current history of DSH. Both groups completed measures assessing DSH, attachment style, perceived QOL and presence of depressive symptoms.

Results: DSH was found to be independently associated with an insecure attachment style and a lower perceived QOL. DSH was also associated with a higher level of depression. Perceived QOL was a significant predictor of risk of engaging in DSH, controlling for age, gender and attachment style.

Discussion / Conclusions: The results of this exploratory study provide preliminary evidence that an insecure attachment style appears to increase the risk of engaging in DSH in adolescence. This risk appears to be mediated by a young person's perceived QOL and level of depressive symptoms; with adolescents' with a lower perceived QOL and higher depressive symptoms being at greater risk of DSH. Methodological constraints are discussed.

INTRODUCTION

The present study sets out to explore the relationship between deliberate self harm, attachment style and perceived quality of life in adolescence. An overview of each of these areas is given before considering how they may be interrelated.

1.1 - DELIBERATE SELF HARM

Within NHS Grampian there are two mental health services for adolescents (young people aged between their thirteenth and nineteenth birthdays) and their families. The Young People's Department (YPD) in Aberdeen provides a multi-disciplinary service for individuals aged between thirteen to eighteen years old with mental health difficulties and their families who live in the Aberdeen City and Aberdeenshire areas of the Grampian region. The Rowan Centre in Elgin provides a multi-disciplinary service for individuals aged from birth to eighteen years old with mental health difficulties and their families who live in the Moray area of the Grampian region. Both the YPD and the Rowan Centre receive a number of referrals each year regarding adolescents who engage in deliberate self harm (DSH).

1.1.1 - A working definition of deliberate self harm (DSH).

The term "deliberate self harm" (DSH) describes a range of behaviours. Different types of DSH include cutting, scratching, hitting, bruising, scalding or burning ones own skin; taking an overdose of drugs or alcohol; or ingesting toxic substances. There is no single agreed definition or meaning assigned to the term

"deliberate self harm" (Fox & Hawton, 2004). Neither the Diagnostic and Statistical Manual of Mental Disorders (4th edition) (DSM-IV) (American Psychiatric Association, 1994); nor the International Statistical Classification of Diseases and Related Health Problems (Tenth Version) (ICD-10) (World Health Organization, 1994) include specific diagnostic criteria for DSH (Fox & Hawton, 2004).

Morgan, Burns-Cox, Pocock and Pottle (1975) define deliberate self harm (DSH) as:

> "*a non-fatal act, whether physical injury, drug overdose or poisoning, carried out intentionally in the knowledge that it was potentially harmful and in the case of drug over dosage, that the amount taken was excessive*".

The Mental Health Foundation (2006) describes deliberate self harm as:

> "*the various things that some young people do to harm themselves in a deliberate and usually hidden way. The most common methods involve repeatedly cutting the skin, but burning, scalding, banging or scratching one's own body, breaking bones, hair pulling and ingesting toxic substances or objects are all done as well".*

Published literature to date is scattered with terms such as "deliberate self harm", "self cutting", "parasuicide", "attempted suicide", "self poisoning", and "self injurious behaviour" (Fox & Hawton, 2004). These terms are often used interchangeably to refer to different acts and behaviours, with different studies adopting different terminology, resulting in confusion regarding exactly what constitutes DSH. Some researchers have suggested that self harm behaviour follows a continuum mediated by an individual's level of suicide intent, from non-

fatal self harm with no suicidal intent at one end to successfully completed suicide at the other (Webb, 2000). Suyemoto (1998) points out that when attempting to define deliberate self harm, it should be made explicit whether deliberate self harm which occurs in the context of a general cognitive impairment (for example responding to a need for self stimulation or engaging in stereotypic behaviour characteristic of pervasive developmental disorders such as autism) is included or excluded from the definition.

For the purpose of the present study, elements from Morgan *et al*'s (1975), Suyemoto's (1998) and the Mental Health Foundation's (2006) definitions have been combined to create a working definition of DSH. Where used from herein the term "deliberate self harm" (DSH) shall refer to - "Intentionally inflicted self injurious behaviours, (incorporating intentionally cutting, scratching, hitting, bruising, scalding or burning one's own skin; taking an overdose of drugs; or ingesting toxic substances) not occurring in the context of a general cognitive impairment, with a non-fatal outcome".

1.1.2 - Prevalence of DSH in adolescence.

It is estimated that as many as one in almost every seven young people (14%) aged between twelve to eighteen years old may deliberately harm themselves at some stage during adolescence (Hawton & James, 2005). Research indicates that just under one in every five adolescents has considered DSH (Kann, Kinchen, Williams, Ross, Lowry, Grunbaum, & Kolbe, 2000; The Priory, 2005).

Reported prevalence rates of DSH in adolescence vary between around five and fourteen percent (Fox & Hawton, 2004; Green, McGinnity, Meltzer, Ford & Goodman, 2005; Hawton & James, 2005; Meltzer, Harrington, Goodman & Jenkins, 2001). The prevalence of DSH in an adolescent population is estimated to be higher than that in any other age group (Hjelmeland & Groholt, 2005; King, 1997; National Institute for Clinical Excellence, 2004). Suyemoto and MacDonald (1995) carried out a survey of outpatient therapists and found that just under half (47%) of all the therapists had seen an adolescent who engaged in DSH. In hospital based samples of young people, overdoses of medication tend to be more prevalent than other types of self harm; however, in community based samples it is estimated that around two thirds of all DSH in young people involves self cutting (Hawton, Rodham, Evans & Weatherall, 2002).

Prevalence rates of DSH in young people have been increasing since the 1960's (Fox & Hawton, 2004). In the 1980's prevalence rates appeared to have reached a plateau, however recent studies suggest that the number of young people engaging in DSH began to climb again in the late 1980's / early 1990's and has been rising steadily into the early 21st century (Fox & Hawton, 2004; Hawton, Fagg, Simkin, Bale & Bond, 2000).

Within an adolescent population, the prevalence of DSH is thought to vary depending on exact age, gender, and the presence or absence of mental health difficulties. DSH is less common in individuals aged under twelve years old, with

prevalence rates steadily increasing with age up to the end of adolescence (Sourander, Aromaa, Pihlakoski, Haavisto, Rautava, Helenius & Sillanpaa, 2006). Research indicates that the majority of first episode self harming behaviour occurs in young people aged around 14 – 15 years old (Hawton *et al*, 2000; Sourander *et al*, 2006). It is generally accepted that DSH is more prevalent in females than males, with studies showing that up to four times as many girls engage in DSH than boys (Fox & Hawton, 2004, Hawton *et al*, 2002). However, some researchers argue that there is little evidence of gender differences in the prevalence of DSH (Gratz *et al*, 2002). DSH has been shown to be more prevalent in young people with co-morbid mental health difficulties (Green *et al* 2005; Meltzer *et al*, 2001).

There are a number of limitations to the data on prevalence of DSH in young people which should be considered when interpreting the above information. Primarily, there is currently no standard definition of self harm used in research. The majority of studies do not differentiate between self harm and attempted suicide, and there may be important differences between these two groups (Evans *et al*, 2005). The lack of consensus between researchers about what constitutes DSH results in difficulty comparing the results of different studies and complicates generalisation across studies. Secondly, the measurement tools used to ascertain the presence or absence of DSH vary between studies, again making comparison between studies difficult (Webb, 1999). Thirdly, no national

UK wide statistics on self harm are currently available from which to obtain an accurate UK wide prevalence rate.

A final methodological limitation to the data on prevalence of DSH in young people is that a number of the studies that report prevalence rates draw their sample from young people who are currently receiving the support of outpatient or inpatient mental health services, resulting in a sample bias. This sample bias has two potential implications. Firstly, as noted above, Meltzer *et al* (2001) found that DSH is more prevalent in those with mental health difficulties. Consequently drawing prevalence rates from a sample of adolescents with mental health difficulties may overestimate the true prevalence of DSH in society. On the other hand, research indicates that a significant proportion of young people in the community hurt themselves secretly before finding the courage to tell someone, and many of them never ask for help (Conterio & Lader, 1998; Mental Health Foundation, 2006). This indicates that prevalence rates from clinic based samples who have sought help perhaps grossly underestimate the prevalence of undisclosed DSH in society. In a community based study, Hawton *et al* (2002) found that fewer than 13% of individuals who engaged in DSH actually presented to hospital, again suggesting that hospital based prevalence studies may not accurately reflect the actual number of individuals who engage in DSH in the community. Gratz, Conrad and Roemer (2002) published a United States based study which involved 159 undergraduate psychology students. A striking 38% of all those involved in the study reported a previous history of DSH. On the basis of

their data, Gratz *et al* (2002) suggested that other studies reported prevalence rates may be underestimating the true number of young people who engage in DSH but do not seek help.

1.1.3 - DSH in adolescence

As noted above, research indicates that DSH commonly originates in adolescence with the most common age for first episodes of DSH being in individuals aged around fourteen to fifteen years old. A proportion of individuals who begin to self harm in their teens appear to "grow out" of it as they move out of adolescence into adulthood (Fox & Hawton, 2004; Mental Health Foundation, 2006). In a longitudinal study, Harrington, Pickles, Aglan, Harrington, Burroughs and Kerfoot (2006) found that 30% of individuals who had engaged in DSH in their adolescence continued to self harm in adulthood.

The issue of whether DSH in young people is qualitatively different from DSH in an adult population was addressed by Hjelmeland and Groholt (2005) in a recent study comparing the differences between DSH in an adolescent (aged eleven to nineteen years old) and an adult (aged twenty years and older) population in Norway. They found few differences between the two groups in terms of DSH. The study concluded that differences found between the two groups are more likely to be related to the influence of age itself. The authors cited cognitive immaturity resulting in reduced capabilities for problem solving; impulsivity; and general immaturity and lack of experience in dealing with problematic

circumstances as factors that were influential in the adolescent group but not the adult group (Hjelmeland & Groholt, 2005). The researchers also note that adolescence is likely to be a time of change with a less predictable life situation. These differences may explain why some individuals "grow out" of engaging in DSH following their adolescence. Hjelmeland and Groholt (2005) suggest that the stigma of mental health difficulties has reduced over the past few decades, and the current adolescent generation may hold a more accepting attitude of DSH than older cohorts.

Research suggests that DSH in young people tends to be a secretive and hidden behaviour (Mental Health Foundation, 2006), and that parents are often unaware that their child is harming themselves (Green *et al*, 2005; Meltzer *et al*, 2001; Sourander *et al*, 2006).

1.1.4 - Risk Factors associated with DSH in adolescence

Despite the significant prevalence of DSH in young people (Hawton & James, 2005), and the fact that DSH appears to originate during adolescence for a significant number of individuals; research into the precipitating and predisposing risk factors associated with DSH in adolescence is still at a relatively early stage. Knowledge about the early antecedents of adolescent DSH is vital for both preventative purposes and also to inform clinical intervention (Sourander *et al*, 2006).

It is likely that there is a complex combination of risk factors that predispose, precipitate and perpetuate DSH in adolescence. Harrington (2003) proposes that there is rarely a linear relationship between the antecedents of an episode of DSH and the behaviour itself. He suggests that aetiological factors interact with psychological, social, biological and environmental processes to result in young people engaging in DSH. The combination of factors is likely to be unique to each individual (Harrington, 2003).

1.1.5 - Precipitating factors

In terms of precipitating factors, Hawton and James (2005) cite some of the most common circumstances occurring immediately before young people engage in DSH. These include having difficulties or disputes with family, peers or sexual partner, experiencing school or work problems, being bullied, having physical ill health, and using alcohol and drugs.

1.1.6 - Predisposing Factors

Evans *et al* (2004), Fortune and Hawton (2005) and Suyemoto (1998) all provide comprehensive reviews of studies to date which have explored predisposing factors associated with DSH and suicidal phenomena in adolescence. Interested readers should consult these papers for an in-depth analysis of the current literature regarding risk factors. It should be noted that a great deal of studies in this area are fraught with methodological constraints similar to those outlined above for the studies investigating the prevalence of DSH in adolescence. It is

useful to separate predisposing risk factors identified in the literature into the categories of psychological, family, social and environmental factors.

1.1.6.1 - Psychological Factors

Research to date has highlighted several potential psychological risk factors for engaging in DSH. These include gender differences, the presence of co-morbid mental health difficulties, and having certain personal characteristics.

The concept of there being gender differences in predisposing risk factors associated with DSH requires further research. Gratz *et al* (2002) proposed that there are gender differences in terms of the risk factors associated with engaging in DSH based on the results of their study. However, Gratz *et al*'s (2002) study used undergraduate psychology students as participants and there were twice as many female as male participants. Additionally, other studies have found few differences between males' and females' reported reasons for harming themselves (Kumar, Pepe & Steer, 2004).

Research has consistently demonstrated that there is a link between having various different co-morbid mental health difficulties and engaging in DSH (Patton, Harris, Carlin, Hibbert, Coffey, Schwartz & Bowes, 1997). There is a strong link between engaging in DSH and having depression, which has been found consistently across studies (Harrington et al, 2006; Kerfoot, Dyer, Harrington, Wood & Harrington, 1996; Kingsbury, Hawton, Steinhardt & James, 1999;

Kovacs, Goldston, & Gatsonis, 1993; Wallace, 2003). Ruuska, Kaltiala-Heino, Rantanen and Koivisto (2005) concluded that eating disorders are associated with an increased prevalence of DSH, with a particularly strong association between bulimia nervosa and DSH. Having an anxiety disorder has also been shown to be a risk factor for DSH in adolescence (Kerfoot *et al*, 1996). Low self-esteem (Evans *et al*, 2004; Hawton & James, 2005) and poor body image (Evans *et al*, 2004) have been shown to be more common in young people who engage in DSH as opposed to control groups. Several studies have demonstrated a link between conduct disorder and DSH (Fox & Hawton, 2004).

A number of personal characteristics have been found to be more prevalent in individual's who self harm, indicating that these characteristics may predispose young people to engage in DSH. Fox and Hawton (2004) state that these characteristics include poor problem solving ability, impulsivity, hopelessness, and anger and hostility. Orbach, Bar-Joesph and Dror (1990) found that young people who harm themselves have poorer problem solving skills and tend to depend more on others. Hawton, Cole, O'Grady and Osborn (1982b) and Kerfoot *et al* (1996) both found that a significant proportion of adolescents who had taken an overdose had done so impulsively and had not made any former plans to do it. Kingsbury *et al* (1999) also found that impulsivity was a feature of their DSH group. McLaughlin, Miller and Warwick, (1996) found that feelings of hopelessness in adolescents who self-harm is an important independent variable over and above depression. In terms of anger and hostility, Hawton, Osborn,

O'Grady and Cole, (1982c) found that young people with a history of antisocial behaviours were twice as likely as adolescents without a history of antisocial behaviour to repeat an overdose within a year.

1.1.6.2 - Family Factors

Several family risk factors for DSH in adolescence have been identified. Family dysfunction has been shown to be correlated with DSH (Evans *et al*, 2004; Keeley, O'Sullivan & Corcoran, 2003; Kerfoot *et al*, 1996). Problematic relationship patterns between parents and children are associated with DSH in young people (Kerfoot *et al*, 1996; Webb, 2002). van der Kolk, Perry and Herman (1991) conclude that early emotional and physical neglect is strongly related to later self harm. Family cohesion has been shown to be a protective factor against DSH (Rubenstein, Halton, Kasten, Rubin & Stechler, 1998).

Fox and Hawton (2004) point out that over half of all young people under sixteen years of age that present to services following DSH live in a single parent family. Fox and Hawton (2004) estimate that up to forty percent of these young people will have spent time in local authority care. Meltzer *et al* (2001) found that DSH was more prevalent in single parent families and families with step children. Kerfoot *et al* (1996) found that young people who had taken an overdose were more likely than psychiatric controls to be from families who relied on state benefits. However Evans *et al* (2004) provide evidence that family socio-economic status is not linked to DSH.

1.1.6.3 - Social Factors

In terms of social factors related to DSH, Keeley *et al* (2003) conclude that life events of an interpersonal nature are strongly associated with DSH. Keeley *et al* (2003) carried out a prospective case note study in Southern Ireland of individuals aged fifteen and above. The authors found that stresses with interpersonal relationships such as family conflict or stresses associated with work or school were the most commonly cited reason behind individuals presenting with a first episode of DSH. It is of interest that women reported more life stressors than men in Keeley *et al*'s (2003) study, as this may in part explain why DSH is more prevalent in females. McLaughlin *et al* (1996) found that young people who self harmed reported having significantly more severe problems in the areas of family relationships and school compared to a community based and a clinical control group.

Studies have shown that DSH is associated with recent episodes of self harm by peers or family members (Hawton *et al*, 2002); and some studies have suggested a contagion effect (Taminen, Kallio-Soukainen, Nokso-Koivisto, Kaljonen & Helenius, 1998). Nock and Prinstein (2005) found that eighty two percent of young psychiatric inpatients had engaged in DSH in the presence of a peer in the last year. Crouch and Wright (2004) noted that participants in their study (which took place in a residential treatment centre) distinguished between being a "genuine" self harmer and self harming for attention. "Genuine" self harmers

reported the feeling that they needed to inflict a certain level of damage to themselves, and also that they performed the act in secret.

Research has found that sexually active young people are significantly more likely to engage in DSH (Evans *et al*, 2004). A consistent clear link has been demonstrated between DSH and childhood physical and sexual abuse (Evans *et al*, 2004; Evans, Hawton & Rodham, 2005b; Gratz, 2003; Keeley *et al*, 2003). van der Kolk *et al* (1991) suggest that self destructive behaviour can be traced back to childhood physical and sexual abuse.

1.1.6.4 - Environmental factors

In terms of environmental factors, alcohol and substance misuse have been linked to an increased likelihood of adolescents engaging in DSH (Evans *et al*, 2004; Patton *et al*, 1997). Fox and Hawton (2004) discuss the impact of seeing or hearing about DSH through the media. They conclude that exposure to examples of suicidal behaviour through the media can be a contributory factor in suicidal behaviour in young people. Cultural factors may also be relevant. Young, Sweeting and West, (2006) carried out a longitudinal cohort study in central Scotland and found that identification as belonging to a "Goth " subculture was strongly associated with engaging in DSH.

1.1.7 - Function of DSH in adolescence

Although various researchers have endorsed different theories about the function of DSH in adolescence, there remains a dearth of empirical research in this area. The Mental Health Foundation (2006) note that DSH in young people tends to be a symptom of underlying emotional, social or psychological difficulties rather than the core problem.

It is likely that the function of DSH may be different for different groups of people, with elements unique to each individual. The function of DSH may also vary between different types of self harm. Rodham, Hawton and Evans (2004) conducted a community based study comparing the reported reasons of young people who had cut themselves with the reported reasons of young people who had taken an overdose. They found that young people who took overdoses were more likely to report that they wanted to die; while young people who had cut themselves were more likely to report DSH as meeting a need to gain relief from feelings and as a means of punishing themselves (Rodham *et al*, 2004).

Cerdorian (2005) points out that DSH can be seen to be adaptive as well as destructive. The theory that DSH functions as a strategy to regulate emotions / affect is common in the published literature (Kimball, 2004; van der Kolk, 1996). Engaging in DSH has been explained as a way of expressing anguish, desperation or other feelings; and an effective means to reduce tension (Favazza & Conterio, 1989; Hawton & James, 2005; Mental Health Foundation, 2006).

Crouch and Wright (2004) carried out a qualitative study exploring why adolescents engaged in DSH. They found that adolescents described DSH as a response to conflict, distress and anger. DSH has also been described by researchers and individuals who harm themselves as functioning as a method of self punishment, where individuals punish themselves for perceived misdeeds or due to feelings of unworthiness or uselessness (Hawton & James, 2005; Osuch, Noll & Putnam, 1999).

McLaughlin *et al* (1996) argue that adolescents have less life experience to draw upon and therefore fewer problem solving resources in stressful situations. They propose that DSH is a maladaptive problem solving technique resulting from feelings of hopelessness (McLaughlin *et al*, 1996).

It has also been suggested that DSH functions as a means of taking back control when the young person perceives that it is not possible to control external events (Spandler, 1996). Sinclair (2005) carried out a qualitative study exploring reasons why individuals with a past history of DSH formerly engaged in DSH. Sinclair (2005) concludes that clients with a history of DSH talk about their past experiences in terms of feeling that they did not have control over their lives at the time. Issues of control centred around alcohol dependence, untreated mental health issues and interpersonal disputes. van der Kolk, Perry and Herman (1991) are amongst the group of researchers who state that DSH functions as a grounding technique for dissociation in some individuals. Some researchers

suggest that DSH functions to change the behaviours of others around the individual who is self harming (Hawton & James, 2005).

For some individuals, engaging in DSH may function as a means to end their life (Hawton & James, 2005). Although it is now widely accepted that suicidal intent is not present for a significant number of individuals who engage in DSH (Fox & Hawton, 2004), psychological autopsy studies have shown that a significant proportion of young people who have committed suicide have a prior history of DSH (Houston, Hawton & Shepperd, 2001).

Suyemoto (1998) suggests that DSH may serve more than one function simultaneously. In a review of empirical and theoretical literature, Suyemoto (1998) proposes six alternative functional models to account for the function of DSH. These models encompass the areas of Environmental, Antisuicide, Sexual, Affect regulation, Dissociation and Boundaries. Suyemoto's (1998) Environmental model proposes that engaging in DSH creates environmental responses which are reinforcing to the individual. In line with psychoanalytic theories, Suyemoto's (1998) Antisuicide model suggests that DSH may function as a suicide replacement, and act as a compromise between life and death drives. This model sees DSH as an active coping behaviour used to avoid suicide. The Sexual model, which is based largely on Freudian theory, suggests that for some individuals DSH acts to resolve unconscious conflicts over sexuality, menarche, and menstruation. Suyemoto's (1998) Affect regulation model proposes that DSH

functions as a means to express and control emotions such as anger, anxiety, or pain that cannot be expressed verbally or through other means. The Dissociation model suggests that DSH functions as an attempt to cope with and control episodes of dissociation by bringing the individual back into touch with reality again. Suyemoto's last model of the function of DSH concentrates on interpersonal factors and suggests that DSH may function to create a barrier, boundary or distinction between the self and others, in order to protect against being engulfed or losing ones own identity.

In a thought provoking article, Clark (2002) describes self harm as a "somatic language", and proposes that health professionals must see DSH as a client's method of communicating their thoughts, emotions and feelings instead of using verbal utterances. Clark (2002) states that individuals who engage in DSH may be unable to express their feelings in words. This conversion of emotional pain to physical pain by tissue damage allows it to be dealt with by physical intervention. Clark (2002) proposes that overdosing oneself can be seen as a temporary method of blanking out emotional pain.

1.1.8 - Intervention / Management of DSH in adolescence.

Hawton and James (2005) note that there are a number of treatment options for young people who engage in DSH. These include individual therapies such as problem solving therapy, cognitive behaviour therapy, anger management, or treatment of underlying co-morbid mental health or substance abuse difficulties;

family therapy, group therapy, and making changes to the young person's environment and social circumstances. Harrington and Saleem (2003) discuss the applicability and usefulness of a cognitive behaviour approach in the management of DSH in adolescence. The Mental Health Foundation (2006) found that from a service user's perspective, self help information and distraction techniques were seen as helpful in the management of DSH.

Hawton, Townsend, Arensman, Gunnell, Hazell, House and van Heeringen (2005) conducted a systematic review of randomised controlled trials examining the effectiveness of psychosocial and psychopharmacological treatment approaches in the management of individuals who have engaged in self harm. Hawton *et al* (2005) concluded that there is uncertainty about which types of psychosocial or psychopharmacological treatments are effective in the management of individuals who self harm. The authors comment that this is mainly because there are a lack of trials which have had enough participants for the results to be interpreted as clinically meaningful. Burns, Dudley, Hazell and Patton (2004) carried out a review of evidence based clinical management of DSH specifically in young people, and also note that the evidence base for treatments designed to reduce repetition of DSH is very limited and that what evidence is available has a number of methodological constraints.

As well as direct intervention with young people who engage in DSH; training and prevention have also been identified as key areas to managing DSH in

adolescence. Evans, Hawton and Rodham (2005a) and The Mental Health Foundation (2006) suggest that school based work may be a promising area in which to tackle the prevention of self harm through the implementation of peer support schemes, on the premise that young people may not resort to DSH if better access to peer support or someone to talk to was available. Additionally, the Mental Health Foundation (2006) recommend that training about DSH for school and healthcare staff, along with other adults who work with young people is essential. Training would aim to increase understanding and awareness of adolescent DSH, as well as highlighting what services and support are available to young people who self harm. Best (2006) found that teachers' knowledge and awareness of DSH is sparse and their reactions are often of shock or panic. Training would also increase the likelihood that adults would respond appropriately to a young person's disclosure of DSH in a respectful, non-judgemental and supportive manner. Crawford, Geraghty, Street and Simonoff (2003) found that almost half of the staff they included in their study would appreciate more training on DSH in adolescence.

The Mental Health Foundation (2006) recommends that the issue of DSH in young people is raised at a governmental level, with United Kingdom health departments being given overall leadership for the development of policies that encompass plans and strategies to tackle the issue of DSH in young people. The Mental Health Foundation (2006) suggests that health departments have close

links with departments of education and youth justice to foster a cross departmental approach towards the management of DSH in young people.

1.2 - ATTACHMENT

Attachment theory provides a valuable framework for understanding risk and protective factors in the development of psychopathology (Rutter, 1995). An outline of the theoretical origins and main principles of attachment theory will be given, before discussing how attachment theory has been used as a framework for understanding the development of psychopathology. This is followed by an exploration of how attachment theory may be relevant to understanding DSH in young people.

1.2.1 - Origins of Attachment Theory.

Attachment theory is the joint work of John Bowlby (1969, 1973, 1980) and Mary Ainsworth (Ainsworth, 1967; Ainsworth, Blehar, Waters & Wall, 1978). Although Bowlby and Ainsworth worked independently of each other in their early careers, over time their individual ideas have been wed to form the basis of attachment theory. Bowlby (1969, 1973, 1980) formulated the basic tenets of the theory and Ainsworth's methodology allowed empirical validation of Bowlby's ideas, threw up future research directions and made it possible to expand the theory.

1.2.2 - Attachment theory – Bowlby's contribution

Bowlby's (1969, 1973, 1980) original theory proposed that affectional ties between infants and caregivers have a biological basis, best understood in an evolutionary context (Goldberg, 2000). Bowlby (1969, 1973, 1980) suggested that there are "prewired" dispositions on the part of both the infant and caregiver to behave in ways that increase the likelihood of infant survival. He suggested

that infants are biased to behave in ways that maintain and enhance proximity to caregivers and elicit their care and investment. These behaviours include orientating signals such as vocalisation or crying, and direct actions such as approaching and clinging. Bowlby (1969, 1973, 1980) also suggested that care giving adults are biased to engage in protective behaviours towards the infant. Attachment theory in childhood focuses on caregivers as protectors, and providers of safety and the psychological concomitant of security.

Attachment theory postulates that during the first year of life, an infant's repertoire of proximity–promoting behaviours becomes organised into a goal oriented attachment behaviour system, focused on a specific caregiver. Bowlby (1969, 1973, 1980) noted that this is usually the mother, but can be any individual who has been consistently responsive to the infant's signals. When the attachment behavioural system is in a goal state, (that is an infants needs are being met and there is adequate proximity and contact), attachment behaviours are not evident. However, Bowlby (1969, 1973, 1980) proposed that if conditions occur which threaten infant health or survival (such as tiredness, illness or an environmental threat) infant attachment behaviours and adult protective behaviours are triggered. He stated that attachment systems are triggered and influenced by three main sources - the child, the environment, and the attachment figure. Within an attachment system, goals are set and reset to fit the context. Attachment behaviours are modified over time, reflecting the child's developmental stage, but continue to serve the same psychological function (Goldberg, 2000).

Bowlby (1969, 1973, 1980) proposed that children's experiences of their care giving environment and relationships with caregivers are internalised to form enduring cognitive schemas of relationships. Bowlby (1969, 1973, 1980) termed these cognitive schemas "internal working models". Internal working models are essentially cognitive and affective representations of how relationships work, based on early experience. An individual's internal working model is reflective of whether or not they perceive themselves to be worthy of receiving care (model of self) and whether or not they perceive that others are reliable and trustworthy to provide care (model of others) (Bartholomew & Horowitz, 1991; Bowlby, 1969, 1973, 1980). Bowlby (1969, 1973, 1980) proposed that internal working models guide both the way that an individual interacts with others and also how an individual interprets interpersonal interactions. Internal working models help organise an individual's affect and social experience (Nakash-Eisikovits, Dutra & Westen, 2002). Cognitive components and internal working models play an increasingly important role as the child develops (Goldberg, 2000).

1.2.3 - Attachment theory – Ainsworth's contribution

Ainsworth and her colleagues (Ainsworth *et al*, 1978) were interested in how infants organised their behaviour to use an attachment figure as part of their coping strategy to alleviate distress (Goldberg, 2000). They devised the "Strange Situation", to provide an empirical method of classifying infants' behaviours into four categories of attachment style (Ainsworth *et al* 1978). The Strange Situation is a structured laboratory examination of a series of stressful brief separations and

reunions between the infant and caregiver. Attachment styles are established from an infants response to the Strange Situation and assessed by observing various behaviours such as the infant's proximity seeking behaviours, contact-maintaining behaviours, avoidance of mother, resistance to comforting, search behaviour during separation, and distance interaction (looking and vocalising) with the mother (Goldberg, 2000). Ainsworth *et al* (1978) originally classified three main attachment styles - "Secure", "Avoidant" and "Ambivalent / Resistant".

"Secure" infants were observed using their mother as a secure base for exploration. They had confidence in their mother's availability, responsiveness and ability to provide comfort. During separation, "Secure" infants showed signs of missing their parent, especially at the second separation. Upon reunion, "Secure" infants actively greeted the parent with a smile, vocalisation or gesture. When a "Secure" infant became upset, they sought contact with their parent and once comforted, returned to exploration. Parents of "Secure" infants were sensitive to their child's signals, readily available and responsive.

"Avoidant" infants were observed to be unconcerned with their mother's presence or absence. They explored readily with little display of affect or returning to their parent. Upon separation "Avoidant" infants responded minimally, with little visible distress when left alone. Upon reunion "Avoidant" infants looked away from and / or actively avoided their parent. Ainsworth *et al* (1978) suggested that this pattern

is promoted by parents who are generally unresponsive to the infant, perhaps as a result of their own parenting experiences and their own attachment style.

"Ambivalent / Resistant" infants were observed to be visibly distressed upon entering the room, and often fretful or passive. They failed to engage in exploration. Upon separation they became unsettled or distressed and failed to engage in exploration and play after separation. Upon reunion, "Ambivalent / Resistant" infants displayed anger and alternated bids for contact with angry rejection and tantrums. "Ambivalent / Resistant" infants were preoccupied with getting maternal attention to the exclusion of other activities but appeared to fail to find comfort in their parent. Ainsworth *et al* (1978) proposed that this pattern is promoted by parents being available and responsive on some occasions but not on others.

Over the course of studies, a small number of infants could not be classified into the original three category scheme. Consequently, a fourth category of attachment style, "Disorganised / Disorientated", was introduced to describe these infants (Main & Soloman, 1986). Infants in this category were unable to maintain a consistent strategy, demonstrating a lack of a coherent pattern of responding. Their behaviour did not appear to have an observable goal. When an infant's behaviour is thought to best fit within the "Disorganised / Disorientated" category, attempts are made to determine the underlying strategy which the infant appears

to be unable to implement (Secure, Avoidant or Ambivalent / Resistant) (Goldberg, 2000; Main & Soloman, 1986).

As well as introducing a means of classifying infants' attachment styles empirically, Mary Ainsworth (1967) also introduced the concept of attachment figures as being a secure base from which infants can explore the world; and a safe haven for infants to return to.

1.2.4 - Attachment in adolescence and throughout the life span

Bowlby (1969, 1973, 1980) and Ainsworth (Ainsworth, 1967; Ainsworth *et al*, 1978, Ainsworth, 1989) both considered attachment to be a feature of selected relationships throughout the lifespan (Collins & Read, 1990; Goldberg, 2000). Attachment theory proposes that the effects of early experience are carried forward in individuals' internal working models. Internal working models are influenced by experience over time and are subject to change as experience accumulates. Bowlby (1969, 1973, 1980) proposed that aspects of working models laid down in infancy are inaccessible to consciousness and thus difficult to change. Throughout childhood and adolescence, with development and experience, a general working model of relationships evolves, which reflects an aggregation of experiences in different relationships. Bowlby (1969, 1973, 1980) proposed that some relationships are more influential than others in shaping this. During adolescence and into adulthood, an individual's attachment style determines their personal set of postulates about how relationships operate and

how they are used in everyday life and stressful or difficult situations. This set of postulates is used to guide behaviour in relationships.

Attachment theory proposes that attachments undergo developmental transformations, as new attachment figures are added to the hierarchy and relative preferences for attachment figures may change (Bowlby, 1969, 1973, 1980). In adolescence and adulthood, attachment relationships are those that provide feelings of security and place (not necessarily a protective figure) (Goldberg, 2000). Attachment behaviours in adolescence and adulthood may include proximity seeking (physical closeness) or seeking an attachment figure in a perceived time of need (a safe haven) (Crowell & Treboux, 1995). Ainsworth placed emphasis on attachment in adulthood as reflecting an individuals' confidence in the attachment figures availability and responsiveness, as well as fulfilling the role of being a secure base to explore from (Ainsworth *et al*, 1978, Ainsworth, 1989). There is an increased use of mental representation of attachment figures in adolescence and adulthood (Goldberg, 2000). Attachment behaviour in adolescence and adulthood is reciprocal, with the role of attachment figure and care receiver continually shifting between two adults (Crowell & Treboux, 1995).

Attachment style has been shown to be a stable trait in individuals from the ages of four years old to twenty five years old (Allen, Hauser & Borman-Spurrell, 1996;

Grossman & Grossman, 1991; Hamilton, 2000; Kirkpatrick & Hazen, 1994; Klohnen & Oliver, 1998; Waters, Merrick, Treboux, Crowell & Albersheim, 2000).

1.2.5 - Attachment Styles in adolescence and adulthood.

Bartholomew and Horowitz (1991) provide a model of attachment in adolescence and adulthood. They propose that categorical attachment style is dependent on the model individuals have of themselves (model of self) and the model individuals have of others (model of other), both of which have been influenced by experiences of relationships throughout life. Different combinations of positive or negative models of self and positive or negative models of others produces four categorical attachment styles. Bartholomew and Horowitz's (1991) model of adult attachment is shown in Figure 1 below. In the model, attachment styles are categorised as "Secure" (corresponding with the secure category in childhood), "Dismissing" (corresponding with the avoidant category in childhood), "Preoccupied" (corresponding with the ambivalent / resistant category in childhood) and "Fearful" (corresponding with the disorganised / disorientated category in childhood (Bartholomew & Horowitz, 1991).

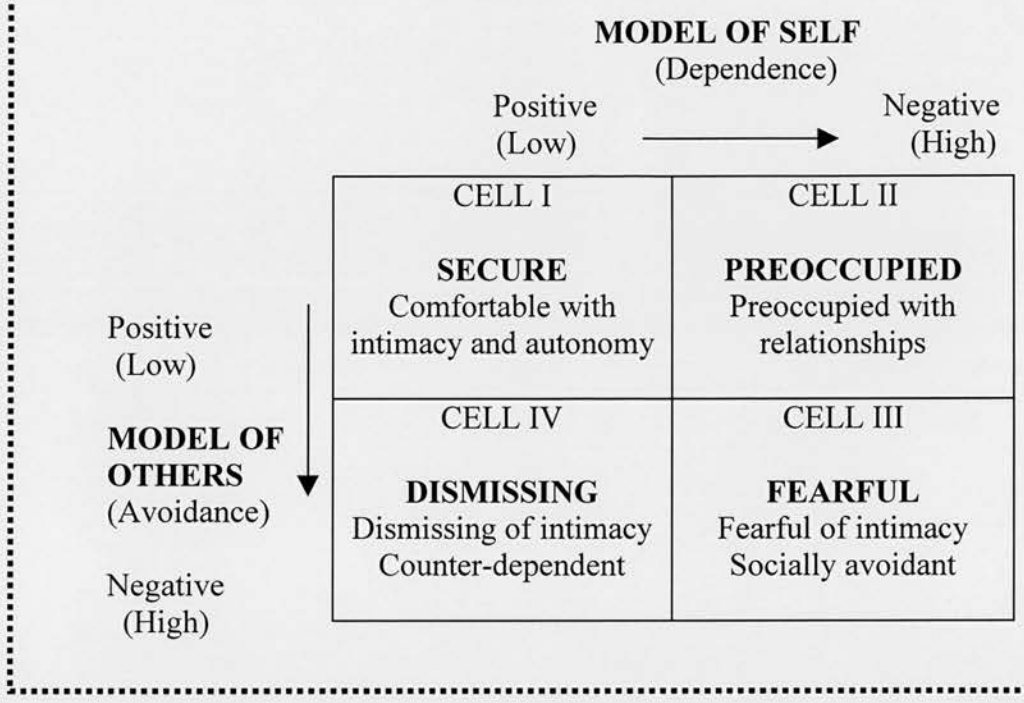


Figure 1 - Model of Adult Attachment (Bartholomew & Horowitz, 1991)

A "secure" attachment style in adolescence or adulthood is akin to that in childhood and is characterised by a positive model of both self and others. Secure individuals are self-confident and hold positive regard for themselves irrespective of external validation of this from others. Secure individuals feel safe and comfortable with emotional closeness and are warm and affectionate towards others (Bartholomew & Horowitz, 1991). Researchers propose that adolescents and adults with a secure attachment style are likely to have received consistently responsive care-giving in early life resulting in them being confident and comfortable with mutually dependent relationships (Ainsworth *et al*, 1978; Karavasilis, Doyle & Markiewicz, 2003).

A "Preoccupied" attachment style in adolescence and adulthood is akin to an ambivalent / resistant style in childhood, and is characterised by a negative sense of self and a positive view of others. Preoccupied individuals have low self-confidence and strive to gain acceptance from others to raise their own self esteem. Preoccupied individuals actively seek others' company and advice and do not like being alone (Bartholomew & Horowitz, 1991). Researchers propose that adolescents and adults with a preoccupied attachment style are likely to have had inconsistent early care-giving experiences resulting in them never being sure that they will get what they need, making an extra effort to gain external approval, and becoming emotionally dependant on others.

A "Fearful" attachment style in adolescence and adulthood is akin to a disorganised / disorientated style in childhood, and is characterised by a negative sense of self and a negative view of others. Fearful individuals present as self-conscious and avoid close contact with others as a means of protecting themselves from anticipated rejection. Fearful individuals frequently have difficulty trusting others (Bartholomew & Horowitz, 1991). It is proposed that the early care-giving experiences of fearful individuals may have been harsh and rejecting, resulting in the development of both poor self esteem and a negative view of others.

A "Dismissing" attachment style in adolescence and adulthood is akin to an avoidant style in childhood, and is characterised by a positive sense of self and a

negative sense of others. Dismissing individuals present with high self-confidence and are very self-reliant. They tend to maintain a high sense of self by downplaying the importance of relationships and avoiding contact with others so as not to reveal their vulnerabilities (Bartholomew & Horowitz, 1991). Researchers propose that individuals with a dismissing attachment style have been exposed to unresponsive early care-giving experiences (Karavasilis *et al*, 2003), resulting in them learning not to depend on others, and becoming overly self-reliant.

1.2.6 - Assessment / Measurement of attachment style

A number of instruments have been developed for classifying attachment style throughout the life-cycle, based upon attachment theory. In infancy, approaches for studying attachment style tend to focus on direct observation of infant and caregiver dyads, specifically based upon reactions to separation and reunion. The classification of adolescent and adult attachment styles tends to be based upon adult self-report descriptions of aspects of close relationships throughout the lifespan. The Adult Attachment Interview (AAI) (George, Kaplan & Main, 1985; Main & Goldwyn, 1994) is the most widely used and best developed adult attachment measure. The AAI consists of the adolescent or adult participating in a semi-structured interview that focuses on childhood experiences with attachment figures. Responses are taped and transcribed. A series of specific ratings are made, based on narrative coherence rather than the content of the transcript, and used to arrive at a categorical classification.

There are various self-report measures available for assessing attachment styles in adolescence and adulthood, such as The Parental Bonding Instrument (PBI) (Parker, Tupling & Brown, 1979); The Relationship Questionnaire (RQ) (Bartholomew & Horowitz, 1991); and The Relationship Scales Questionnaire (RSQ) (Griffin & Bartholomew, 1994).

There are several problems inherent in the classification of attachment style in adolescence and adulthood. Primarily, administration and scoring of the AAI is time consuming and requires specialist training. Secondly, the majority of instruments available for assessing attachment style allow attachment to be categorically defined into the four styles outlined above. This trend appears to have followed on from Ainsworth's early work on the Strange Situation (Ainsworth *et al*, 1978). Nakash-Eisikovits *et al* (2002) criticise this categorical approach to measurement and argue that variables that are measured in a categorical manner have less useful psychometric properties, with information loss and thus reduced power compared to variables measured in a continuous way. Indeed, whether or not attachment style is truly taxonic or whether it is continuously distributed in the population is debatable, as some individuals may span more than one attachment category (Nakash-Eisikovits *et al,* 2002). Some studies have further collapsed the four attachment styles into two styles, to create a dichotomous variable, simply consisting of secure versus insecure attachment (Waldinger, Schulz, Barsky & Ahern, 2006). Both theoretical and empirical literature also commonly discuss attachment style simply in terms of being either secure or insecure (Bradley,

2000). Reasons for creation of a dichotomous secure / insecure concept may include simplification for discursive purposes; the presence of small sample sizes and thus low numbers in the four original categories; or greater ease in terms of statistical analysis. Additionally, it may be easier to make sense of data and draw conclusions by thinking simply in terms of secure or insecure attachment style. However, although simplistic, having a dichotomous concept that categorises attachment as either secure or insecure also has negative implications. As noted above, there are marked differences between individuals classified into the three different categories of insecure attachment, including disparate experiences of care as an infant, dissimilar styles of relating to others, and differing emotion regulation strategies. Classifying attachment style dichotomously results in a great deal of variability of characteristics in the insecure group and consequently may dilute and lose potentially interesting concepts. These points should kept in mind when the collective term "insecure attachment style" is used. A final criticism is that self-report methods rely on subjective rather than objective data.

1.2.7 - Attachment style and psychopathology.

It is generally accepted within the field of mental health that attachment style is one factor among many that is likely to be influential in the development of subsequent psychopathology (Carr, 1999; Rutter, 1995). Theoretically, a relationship between attachment style and the development of psychopathology is expected, particularly in psychopathology that involves difficulties with affect regulation and interpersonal functioning (Bowlby, 1969, 1973, 1980; Nakash-

Eisikovits *et al*, 2002). Bowlby's original writings (1969, 1973, 1980) did not explicitly state the existence of a linear relationship between insecure attachment and the development of psychopathology (Bradley, 2000). Instead, Bowlby (1969, 1973, 1980) formulated that insecure attachment was likely to increase an individual's vulnerability to developing mental health difficulties. Attachment theory therefore provides a framework for understanding risk and protective factors in the development of psychopathology (Bowlby, 1980). In order to begin to understand psychopathology from an attachment perspective, there is a need to integrate theoretical perspectives, developmental research on attachment carried out by academics, and clinically based research (Del Carmen & Huffman, 1996).

Researchers and theorists propose that a secure attachment style provides "inner resources" that promote healthy and adaptive methods of coping (Bowlby, 1969, 1973, 1980; McLewin & Muller, 2006). In a study investigating the relationship between attachment styles and coping strategies in eighteen to twenty four year olds, Marques (2006) found that individuals with an insecure attachment style tended to use more dysfunctional or negative coping strategies than securely attached individuals.

A number of researchers have proposed that having an insecure attachment style interferes with an individual's capacity for developing adaptive methods of affect regulation, resulting in the development of psychopathology. Bradley (2000) defines affect regulation as an individual's ability to respond flexibly to the

demands of their environment and deal adaptively with states of emotional arousal. Bradley (2000) proposes that adaptive methods of affect regulation are learned within the family context, dependant on early experiences with care-givers. In the case of secure attachment, care-givers are sensitive to an infant's needs and respond appropriately, generally preventing the infant reaching extremes of emotion. This results in the infant learning that their care-giving environment is responsive to their needs and that their distress can be moderated and controlled (Bradley, 2000). Children with a secure attachment style are able to comfortably express both positive and negative affect that is responded to and initially moderated by caregivers. Bradley (2000) suggests that over time there is a gradual transition where children with a secure attachment style learn to successfully manage and regulate affect themselves. Conversely, in the case of insecure attachment, care-giving may be associated with an infant's needs not being met; displays of extreme emotion, particularly negative emotion; and individuals having to create their own ways of managing this. Goldberg (1994) provides evidence that different attachment styles are associated with different styles of affect regulation. Bradley (2000) notes that insecurely attached individuals appear to have maladaptive ways of coping with prolonged negative arousal, which may result in the development of psychopathology.

It has been suggested that individuals with a secure attachment style are better equipped to manage difficult situations because they have more faith that they can control their environment and that others will be available to help them if required (Ognibene & Collins, 1998). Conversely, individuals with an insecure

attachment style may have negative expectations as regards how much they can control their environment or depend on others (Ognibene & Collins, 1998). Ognibene and Collins (1998) found that individuals with a secure attachment style perceived that more social support was available during times of stress, and were more likely than individuals with an insecure attachment style to utilise social support during difficult times. McLewin and Muller (2006) suggest that individuals with a secure attachment style who have a history of having their needs consistently met may have developed constructive and optimistic views about difficulties in life and be more confident in their own ability to cope, consequently experiencing less distress.

Evidence suggests that infants with insecure attachment styles, particularly avoidant attachment styles, present as being non-distressed despite having concurrent elevated levels of physiological arousal; indicating that they may be suffering from inner distress (Bradley, 2000; Dozier and Kobak, 1992; Grossmann, Grossmann & Schwann, 1986; Spangler & Grossman 1993).

Theory and research have highlighted the contribution of attachment style to personality traits, temperament, emotion experience and regulation, social attributions, interpersonal functioning, sexual behaviour and attitudes, and moral development; all of which may have an impact on the development of psychopathology (Chotai, Jonasson, Hagglof & Adolfsson, 2005; Feeney,

Peterson, Gallois & Terry, 2000; Guttmann-Steinmetz & Crowell, 2006; Searle & Meara, 1999).

Empirical evidence supports theoretical propositions that having a secure attachment style is positively correlated with healthy psychological functioning; and having an insecure attachment style is associated with psychopathology in childhood, adolescence and later life (Cicchetti, Toth & Lynch, 1995; McLewin & Muller, 2006; Rosenstein & Horowitz, 1996). Research studying adolescent and adult psychiatric populations tends to be marked by a higher incidence of individuals with insecure attachment styles (Adam, Keller & West, 1995; Merscham, 2002; Myhr, Sookman & Pinard, 2004). van Ijzendoorn and Bakermans Kranenburg (1996) found that insecure attachment styles were over represented in clinical populations of adolescents and their parents.

Infant attachment patterns have been shown to predict later psychological and behavioural outcomes in childhood (Lyons-Ruth, Easterbrooks & Cibelli, 1997; Rosenstein & Horowitz, 1996; van Ijzendoorn, Goldberg, Kroonenberg & Frenkel, 1992). An insecure attachment style has been linked with behaviour and conduct problems in childhood (Greenberg, Speltz, Deklyen & Endriga, 1991; Marcovitch, Goldberg, Gold & Washington, 1997; Speltz, DeKlyen & Greenberg, 1999) and criminality (Fonagy, Steele, Steele, Higgitt & Target, 1994).

The last decade has seen researchers begin to explore the relationship between attachment style and psychopathology in an adolescent population in more depth. Research has linked insecure attachment styles in adolescence to a variety of presenting clinical problems including agoraphobia (de Ruiter & van Ijzendoorn, 1992); anxiety (Rosenstein & Horowitz, 1996); depression (Cole-Derke & Kobak, 1996); conduct problems (Guttmann-Steinmetz & Crowell, 2006; Speltz *et al*, 1999); eating disorders (O'Kearney, 1996; Ward, Ramsay & Treasure, 2000); and personality pathology (Nakash-Eisikovits *et al*, 2002). Rosenstein and Horowitz (1996) found that young people with a preoccupied attachment style were more likely to have internalising difficulties such as low mood or anxiety; and young people with a dismissing attachment style were more likely to have externalising difficulties such as conduct problems, substance abuse and anti-social behaviour.

In line with Bowlby's original theory, it is important to note that having an insecure attachment style does not necessarily mean that psychopathology will develop, and conversely, the presence of psychopathology does not necessarily indicate that an individual has an insecure attachment style. There are likely to be a host of other psychological, biological and environmental factors that are also directly or indirectly influential in the development of mental health difficulties.

1.2.8 - Attachment style and DSH.

Following on from the literature regarding the association between attachment style and the development of psychopathology, along the same lines of

reasoning, there are strong theoretical underpinnings to expect a relationship between attachment style and DSH. Until relatively recently there was little research into the relationship between attachment style and DSH, particularly in an adolescent population (Wallace, 2003, Wright, Briggs & Behringer, 2005). In the past decade, several theories have been put forward linking attachment style with DSH, with the emergence of some supporting empirical evidence.

As outlined above, DSH in adolescence may serve a number of functions. These include being a dysfunctional means of affect regulation; a way of problem solving; a form of self-punishment; a means of gaining control; and as a way of expressing feelings. If these functions are interpreted in light of attachment theory, it makes sense that DSH may in fact be the behavioural outcome of the presence of maladaptive styles of affect regulation and dysfunctional coping strategies inherent in individuals with an insecure attachment style. Wallace (2003) suggests that DSH may function as a self-soothing mechanism in those with an insecure attachment style. She proposes that having a secure attachment style promotes development of emotion regulation through the process of learning and experience of this from caregivers in early development.

Keeley *et al* (2003) suggest that attachment theory may be used to understand the complex processes by which early experience may predispose individuals to DSH. Linehan (1993) and van der Kolk (1996) propose that an invalidating environment and emotional neglect (both of which are associated with an

insecure attachment style) may be important risk factors for DSH. Some authors have characterised DSH as an attachment behaviour. Adam (1994) proposes that suicidal behaviour may be understood as extreme attachment behaviour. Clark (2002) also suggests that DSH can be interpreted as an attachment behaviour, functioning to avert abandonment or keep others at a distance. Adshead (1998) outlines a case study and concludes that the DSH in the individual in question may be viewed as a pathological attachment behaviour, functioning as a primitive defence against anxiety, or an unconscious struggle to control overwhelming emotions.

To the author's knowledge, there have only been a handful of empirical studies investigating the link between DSH and attachment style. Gratz *et al* (2002) found that insecure attachment style was a significant predictor of DSH in female college students. Kimball (2004) found that an insecure attachment style was associated with poor affect regulation, and that an anxious attachment style was associated with DSH. It must be noted that both Gratz *et al* (2002) and Kimball (2004) used undergraduate psychology students as participants in their studies, which may be seen as an unrepresentative population. Wallace (2003) investigated the relationship between attachment style and DSH in an adolescent clinical population but failed to find a relationship. However, this study can be criticised due to the small number of participants, only including 14 – 16 year olds, and the absence of a control group.

Some studies have investigated the link between DSH and factors which are indirectly related to attachment style (in the sense that these factors are likely to contribute to overall attachment style). van der Kolk, Perry and Herman (1991) found high rates of parental abuse in women who engage in DSH. Martin and Waite (1994) found that adolescents who felt that their parents were unaffectionate and controlling were more likely to engage in DSH.

In summary, theoretically, following the same lines of reasoning that have linked attachment style and the development of psychopathology, a relationship between insecure attachment style and DSH is expected, and some empirical evidence to date supports this assertion.

1.3 - QUALITY OF LIFE

The concept of quality of life (QOL) also provides a potentially encompassing theoretical framework in which to embed explanatory models of DSH in adolescence. A definition of QOL is outlined, followed by a discussion about QOL and the correlates of this in adolescence. The concept of QOL is then linked to the attachment literature, before exploring how perceived QOL may be relevant in understanding DSH in young people.

1.3.1 – Definition and measurement of quality of life (QOL).

The construct "quality of life" (QOL) has been increasingly used as an outcome measure in contemporary health care research. Landgraf (2005) points out that it is now widely accepted that "health" is not simply the absence of disease, but that "health" also includes social, psychological and emotional factors, and incorporates an individual's general wellbeing. As a consequence of the growing trend towards defining the concept of "health" more broadly, the concept of QOL has also received more attention in paediatric and adolescent medicine in the last few years (Edwards, Huebner, Connell & Patrick, 2002).

QOL has been defined from philosophical, psychological, sociological, economic and medical viewpoints (Landgraf, 2005). The World Health Organisation Quality of Life (WHOQOL) Group (1995) defines QOL as:

> *"An individual's perception of their position in life in context of their culture and value systems in which they live and in relation to their goals, standards and concerns. It is a broad ranging concept affected in a*

> *complex way by the person's physical health, psychological state, level of independence, social relationships, and their relationship to salient features of their environment".*

This definition emphasises the fact that perceived quality of life is a subjective concept which is rooted in a cultural, social and environmental context (Harper & Power, 1998). Health related quality of life has been defined as an individual's ability to perform their usual tasks and the impact of this on everyday physical, emotional and social wellbeing (Landgraf, 2005).

In adulthood, subjective level of QOL has been shown to be a relatively stable attribute over time, with scores operating within a narrow range (Petito & Cummins, 2000). Theorists have attributed this stability in perceived QOL to an adaptive mechanism which functions to ensure that adults are generally satisfied with their lives (Petito & Cummins, 2000).

As the National Health Service in the United Kingdom moves towards a model of working which emphasises the need for evidence based practice; evidence of an improvement in the overall health and QOL of patients is a primary justification for giving therapy (Edwards *et al*, 2002). Assessments of perceived QOL pre and post treatment are useful to ascertain the efficacy of interventions. Additionally, assessment of perceived QOL allows clinicians to build a more holistic understanding of a client's difficulties, by taking into account the person's environmental situation and subjective experiences. This in turn informs treatment approaches (Edwards *et al,* 2002).

There is no single recognised and accepted definition of QOL and there is little agreement and consensus as regards how to measure QOL (Fayers & Machin, 2000). The search for a single way to measure QOL implies that QOL means the same to everyone and can be defined and measured by set questions. This is unlikely to be the case however, and researchers have battled to develop instruments that are formalised but also allow respondents to describe their own unique elements of the construct. Instruments to measure quality of life range from global questionnaires to individualised interviews. QOL can be measured objectively (e.g. by using socioeconomic indicators such as unemployment rates and mortality rates; or by using environmental factors such as air quality or access to public services), or subjectively (by self report means) (Huebner, Valois, Suldo, Smith, McKnight, Seligson & Zullig, 2004). Objective indicators of QOL are limited in the sense that they are indirect measures that fail to take account of an individual's internal psychological experience and perception (Nicolson, 2000).

There are numerous self report measures designed to assess adults' perceived QOL, but there are relatively few instruments which have been specifically constructed to examine perceived QOL as a whole in children and adolescents (Huebner *et al*, 2004). Instruments that are available tend to tap specific constructs such as self-esteem or social support, rather than being holistic measures of QOL in children and young people. Additionally, available measures have been criticised in terms of methodological limitations (Gerharz *et al*, 2003). In general, measures of QOL designed for children and adolescents include

questions about the areas of health, safety, material wellbeing, living environment, family, school, social relationships and sense of self.

1.3.2 - Perceived QOL in adolescence.

Huebner *et al* (2004) note that until recently, perceived QOL has largely been a neglected component of adolescent health assessment and intervention, with research in this area being at a relatively early stage. Gerharz, Eiser and Woodhouse (2003) carried out a comprehensive literature search for studies published between 1980 and 1998 relevant to QOL in medicine. They note that only twelve percent of the studies identified were related to children and adolescents; and over ninety percent of these studies relied on parents or others as objective reporters of a child or adolescent's QOL.

Several issues are pertinent in the assessment of perceived QOL in children and adolescents (Nicolson, 2000). Instruments must be developmentally appropriate. What constitutes a good perceived level of QOL in adults may not be the same as that in children or young people. It is important to involve young people in the creation of instruments to avoid adopting what may actually be an adult perspective. The wording of questions should also be reflective of developmental stage. It should be recognised that there is a wide range of levels of maturity; independence; experience and responsibility in this age group when thinking about perceived QOL in an adolescent population (Nicolson, 2000).

Petito and Cummins (2000) found that subjective quality of life in adolescence lies below the predicted normative range for adults. This is perhaps unsurprising, given that adolescence is a transitional and often very stressful period in life (Steinberg, 1993). Individuals face a number of biological, psychological, social and environmental changes during this time. As well as the physical and cognitive changes that come with puberty, changes include moving from primary to secondary school and then onwards to employment. Over the course of adolescence individuals become increasingly reliant on peers, and develop autonomy from their parents, both socially and financially. An increased sense of responsibility and control over personal choices also develops during this period. Given the numerous changes that occur during this time, and the potential stress associated with these transitions, it is surprising that perceived QOL has not been researched further in young people (Petito & Cummins, 2000).

Much of the literature on perceived QOL in an adolescent population has been restricted to health related QOL, where young people have an existing medical condition, for example chronic pain (Merlijn, Hunfeld, van der Wouden, Hazebroek-Kampschreur, Passchier & Koes, 2006), asthma (Hasselgren, Gustafsson, Stallberg, Lisspers & Johansson, 2005), and epilepsy (Benavente-Aguilar, Morales-Blanquez, Rubio & Rey, 2004).

1.3.3 - Correlates of perceived QOL in adolescence.

Although research on perceived QOL in an adolescent population is at a relatively early stage, early studies have indicated that a number of psychological, social, family and environmental factors appear to be linked with perceived QOL in adolescence (Huebner *et al*, 2004). Each of these areas is dealt with in turn below.

1.3.3.1 - Psychological factors

Certain personality characteristics have been shown to be positively correlated with perceived QOL in young people (Huebner *et al*, 2004). These characteristics include social competence, having good social skills, and being extraverted. Having an internal locus of control and good self-esteem have also been positively linked with perceived QOL (Dew & Huebner, 1994). Academic ability has been shown to be associated with higher perceived QOL (Huebner & Alderman, 1993). Research to date indicates that perceived QOL in young people is negatively correlated with having mental health difficulties (Huebner *et al*, 2004). This applies to both internalising and externalising difficulties.

Wilkins, O'Callaghan, Najman, Bor, Williams and Shuttlewood (2004) report data from a longitudinal prospective study on the relationship between early life experience and health related QOL in adolescence. They found that health related QOL in adolescence was related to maternal attitude regarding pregnancy, maternal satisfaction with care giving, maternal mental health; and

child behaviour problems at five years of age. Findings from adolescents self reports confirmed parental reports. From the results of their study, Wilkins *et al* (2004) conclude that QOL in adolescence consists of a complex multitude of factors with some of these factors having their origins in early life experiences.

1.3.3.1 - Family Factors

Family composition is associated with perceived QOL, with young people currently living in two parent families reporting a more positive perceived QOL (Sam, 1998). Shek (2000) highlights that positive family functioning is associated with better overall perceived QOL. There is evidence that family discord and other negative family events are associated with lower perceived QOL in young people (McCullough, Huebner & Laughlin, 2000). Studies have also shown that conflict with parents can adversely affect perceived QOL in young people, with good parental social support being a protective factor (Sam, 1998).

1.3.3.3 - Social Factors

In terms of demographic variables influencing perceived QOL in adolescence, neither age nor socioeconomic status appear to be predictive of perceived QOL in young people. Although more research is required, there may be gender differences in perceived QOL in adolescence. Huebner, Drane and Valois (2000) found that female adolescents reported lower perceived QOL in the areas of friendships, peers and school than male adolescents did. Huebner at al (2004) suggest that there is evidence that there may be differences between ethnic

groups in self rated QOL, with African-Americans reporting a lower overall perceived QOL than white Americans. However, research in this area has produced mixed results and requires further investigation.

Situational factors are likely to play a large role on self reported QOL in young people (Huebner *et al*, 2004, Larson, Csikszentmihalyi & Graef, 1980). Problems at school are negatively correlated with perceived QOL (Huebner & Alderman, 1993). Research has demonstrated that adverse life events reduce self reported level of QOL (McCullough *et al*, 2000).

1.3.3.4 - Environmental Factors

In terms of environmental factors influencing perceived QOL in adolescence, Homel and Burns (1989) found that children's perceived wellbeing was related to whether or not they lived in a residential or industrial area. Children who lived in an industrial area or on a busy street rated their overall perceived QOL as lower than those who lived in residential areas. Studies have shown that individuals living within ethnically homogenous neighbourhoods report a higher overall perceived QOL than individuals living in ethnically diverse neighbourhoods (Sam, 1998).

Huebner *et al* (2004) state that a stronger scientific base is necessary to formulate any firm conclusions about factors associated with perceived QOL in adolescence. Researchers in the field of perceived QOL in adolescence have

suggested setting up a national or international longitudinal database on adolescent perceived QOL (Huebner *et al*, 2004). The creation of such a database would promote further research and allow more conclusive evidence to be drawn from this area.

1.3.4 - Quality of Life and Attachment Style

As noted above, Wilkins *et al* (2004) concluded that QOL in adolescence consists of a complex multitude of factors with some of these factors having their origins in early life experiences. To the author's knowledge, there has been relatively little robust research to date investigating the relationship between attachment style and perceived QOL, particularly in an adolescent population.

Research that has been done to date focuses on health related QOL. Rabung, Ubbelohde, Kiefer and Schauenburg (2004) carried out a study involving patients with atopic dermatitis and hypothesised that having a secure attachment style may act as a "buffer" against the strain of having severe skin problems, thus elevating patients subjective QOL. Rabung *et al* (2004) found that patients with a secure attachment style reported feeling less limited as regards their perceived QOL than patients with an insecure attachment style. Ciechanowski *et al* (2002) found that individuals with a preoccupied or fearful attachment style reported having more physical symptoms than individuals with a secure attachment style. Waldinger *et al* (2006) found that insecure attachment style was associated with higher levels of somatisation. Taken together, the results of Ciechanowski *et al*'s

(2002), Rabung *et al*'s (2004) and Waldinger *et al*'s (2006) studies suggest that the way that general health issues are perceived and coped with may be dependant on an individual's attachment style, with individuals with a secure attachment style having a more adaptive way of perceiving and coping with health difficulties. This may elevate their overall perceived QOL.

Theoretically, it makes sense that having an insecure attachment style may impact on an individual's perceived QOL. Having the traits that are associated with an insecure attachment style, such as a negative view of self and / or others, may hamper how an individual functions in various areas of their life, such as interpersonal functioning, resulting in less satisfaction for the individual in these life areas, and a heightened chance of negative interaction with others. A reduced satisfaction in certain life areas would result in a reduction in overall subjective QOL. More research in this area is required with varying populations before any conclusions can be drawn.

1.3.5 - Quality of Life and DSH

A number of independent studies have examined how various separate elements of what is considered to constitute QOL (such as satisfaction with family and peer relationships; physical health; and social / leisure activities) are associated with DSH in young people (Evans *et al*, 2004). Evans *et al* (2004) review several studies that have investigated the link between general health and DSH and conclude that poorer health appears to be linked to DSH in young people.

However, no known studies to date have explored the association between perceived QOL as a whole rather than its constituent parts, and DSH; resulting in this being an area of interest.

An individual's subjective level of QOL is reflective of their view about various elements of their own life in general, their perception of themselves and also their perception of others. Given that separate constituent parts of what is considered to constitute perceived QOL have been associated with DSH, theoretically, it consequently makes sense that subjective QOL as a whole may be related to likelihood of engaging in DSH.

By taking into account young people's overall perceptions of their lives, a more comprehensive understanding of why some young people engage in particular behaviours such as DSH may emerge (Topolski, Patrick, Edwards, Huebner, Connell & Mount, 2001). Using a perceived QOL framework gives a measurable concept that may be very relevant to understanding DSH in young people and identifying individuals at risk; because it provides an integrative framework for drawing together the multiple external (e.g. family dysfunction, problems with peers and substance misuse) and internal (e.g. having co-morbid mental health difficulties or certain personal characteristics) influences that have been shown to be associated with DSH (Topolski *et al*, 2001). A QOL framework may also give clues as to potential areas of intervention, and highlight sources of resilience.

In conclusion, theoretically, as outlined above, a relationship between perceived QOL and DSH is expected, and early tentative empirical evidence to date supports this assertion.

1.4 - DSH, ATTACHMENT STYLE AND QUALITY OF LIFE IN ADOLESCENCE

1.4.1 - Aims and Objectives of current study

Drawing together the areas of DSH in adolescence, attachment theory and QOL, the current study sought to develop a greater understanding of the factors associated with DSH in adolescence in order to inform much needed advances in the prevention, assessment and management of this difficulty in young people (Gratz *et al*, 2002).

Attachment theory has provided a valuable framework for understanding risk and protective factors in the development of psychopathology. The concept of quality of life (QOL) also provides an encompassing theoretical framework in which to embed explanatory models of psychopathology. The objective of this study was to investigate whether the theoretical frameworks of attachment and QOL are useful in understanding DSH in adolescence, by exploring the relationship between DSH, attachment style and perceived QOL in this population.

The current study had four main aims. The first of these was to investigate the relationship between DSH in adolescence and attachment style. Theoretically, as outlined above, a relationship between attachment style and DSH is expected, and empirical evidence to date supports this assertion. The second aim of the study was to investigate whether or not DSH in adolescence is associated with perceived QOL in adolescence. Again, as outlined above, theoretically, a

relationship between perceived QOL and DSH is expected, and early tentative empirical evidence supports this assertion. The third aim of the study was to investigate whether or not attachment style is associated with perceived QOL in adolescence. Finally, this study sought to investigate whether the concepts of engaging in DSH, attachment style and perceived QOL are inter-related and mutually influential; and whether or not attachment style and perceived QOL can be used to predict DSH in adolescence.

By comparing a clinical sample of young people who currently engage in DSH with a clinical sample of young people who do not currently engage in DSH or have a past history of DSH, this study aimed to find out some of the differences between the two groups. Increased knowledge about the reasons why some young people engage in DSH is necessary to inform clinical treatment approaches and lead to better help being available for these young people, and their families.

1.4.2 - Hypotheses

There were four main hypotheses.

- Firstly, in line with theoretical expectations and preliminary empirical evidence, it was hypothesised that engaging in DSH in adolescence is associated with having an insecure attachment style.
- Secondly, in line with theoretical expectations and preliminary empirical evidence, it was hypothesised that engaging in DSH in adolescence is associated with having a lower level of perceived quality of life. It was

hypothesised that the relationship between engaging in DSH and having a lower perceived quality of life would be particularly the case when considering psychological elements of perceived QOL.

- Thirdly, in line with preliminary empirical evidence, it was hypothesised that having an insecure attachment style is associated with a lower perceived QOL.
- Finally, it was hypothesised that the concepts of engaging in DSH, attachment style and perceived QOL interact with each other and are mutually influential; and that the variables of attachment style and perceived QOL can be used to predict if an individual is at greater risk of engaging in DSH.

METHODOLOGY

2.1 - Experimental Design:

A cross sectional between groups design was adopted with two groups - Group A (13 – 19 year old mental health clinic attendees who had engaged in DSH in the past year); and Group B (control group, consisting of 13 – 19 year old mental health clinic attendees who had no previous history of DSH and did not currently engage in DSH). This study design controls for the impact of mental health difficulties. Quantitative statistics were used for data analysis.

2.2 - Participants:

Participants were thirty-eight adolescents currently attending multi-disciplinary team mental health services for young people within Grampian NHS Trust. Participants were aged between their thirteenth and nineteenth birthdays. The mean age of participants was fifteen years nine months, (189 months) (standard deviation one year five months (17 months). There were eight (21 %) males and thirty (79%) females. All participants were currently registered as being an open case under the responsibility of a qualified mental health professional at either the Young People's Department, Aberdeen; or at The Rowan Centre, Elgin.

2.2.1 - Inclusion / Exclusion criteria.

There were two principle exclusion criteria. Individuals with a learning disability and individuals currently suffering from major mental illness (e.g. psychosis) were

excluded from the study. Exclusion criteria were based on ethical grounds because of difficulty obtaining informed consent from individuals in both groups. Additionally, the symptoms of major mental illness (e.g. hallucinations and delusions) may have had an impact on questionnaire completion.

2.2.2 -Background / Diagnostic characteristics:

Group A – Twenty participants were included in Group A (13 – 19 year olds who had engaged in DSH in the past year). There were three males (15%) and seventeen (85%) females in this group. Participants' ages ranged from thirteen years, six months old (162 months) to eighteen years, two months old (218 months) with the mean age of participants in this group being sixteen years, one month (193 months) (standard deviation one year six months (18 months)).

Nineteen (95%) of the participants in Group A had been diagnosed with co-morbid mental health difficulties. These difficulties were identified from ICD-10 diagnostic codings in individuals' case notes and confirmed with the therapist / clinician responsible for each young person. Co-morbid depression was present in eight cases (40%); co-morbid anxiety was present in 2 cases (10%); co-morbid conduct disorder was present in 2 cases (10%); co-morbid attention deficit hyperactivity disorder (ADHD) was present in 1 case (5%); and a co-morbid eating disorder was present in 1 case (5%). Family dysfunction was rated by the young person's therapist / clinician to be present in 6 cases (30%).

2.2.3 - Group B - Eighteen participants were included in Group B (control group, consisting of 13 – 19 year old clinic attendees who had no current or past history of DSH). There were five (28%) males and thirteen (72%) females. Participants' ages ranged from thirteen years two months (158 months) to seventeen years nine months (213 months), with the mean age of participants in this group being fifteen years five months (185 months) (standard deviation one year three months (15 months).

Participants in Group B were attending mental health services for a number of reasons. These reasons were identified from ICD-10 diagnostic codings in individuals' case notes and confirmed with the therapist / clinician responsible for each young person. The mental health difficulties present in participants in Group B included anxiety (28%), obsessive compulsive disorder (OCD) (22%), grief (11%), attention deficit hyperactivity disorder (ADHD) (11%), depression (6%), conduct disorder (6%), eating difficulties (6%) and psychosomatic difficulties (6%). Family dysfunction was rated by the young person's therapist / clinician to be present in 2 cases (11%). Having a control group consisting of clinic attendees controlled for the potential confounding factors of both attending a mental health service (clinic attendance) and having mental health difficulties.

2.3 - Measures:

Participants in both groups were asked to complete four self-report questionnaire measures:

- The Relationship Questionnaire / Relationship Scales Questionnaire (RQ / RSQ) (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994) (See Appendix 7);
- The World Health Organization Quality of Life Short Measure (WHOQOL Bref) (The WHOQOL group, 1998). (See Appendix 8);
- The Beck Depression Inventory, Second Edition (BDI-II) (Beck, Steer & Brown, 1996) (See Appendix 9) if aged over 16, or Children's Depression Inventory (CDI) (Kovacs, 1992) (See Appendix 10) if aged under 16;
- The Deliberate self harm questionnaire (Schwannauer, 2000) (See Appendix 11).

Each of these measures is discussed in detail below.

2.3.1 - The Relationship Questionnaire / Relationship Scales Questionnaire (RQ / RSQ) (See Appendix 7):

The RQ (Bartholomew & Horowitz, 1991) and the RSQ (Griffin & Bartholomew, 1994) provided a composite measure of attachment style. The two instruments are independently administered and then the scores obtained on each measure are combined to form a composite measure of attachment. The RQ and the RSQ each take approximately five minutes to administer.

The RQ was developed by Bartholomew and Horowitz (1991) to test their four category model of attachment. The RQ consists of four short paragraphs, with each paragraph reflective of one of the four attachment styles (secure, fearful,

preoccupied and dismissing) as it applies in close peer relationships in adolescence and adulthood. Participants are first required to select the paragraph reflecting the prototypical attachment style that they feels applies most to them; and then to rate their degree of personal correspondence to each paragraph on a 7-point scale from "1" (*Not at all like me*) to "7" (*Very much like me*). Four continuous variables corresponding to each attachment style result. These ratings provide a profile of an individual's attachment feelings and behaviour.

The RSQ was developed by Griffin and Bartholomew (1994) and contains thirty short statements based on, and drawn from Hazan and Shaver's (1987) attachment measure, Bartholomew and Horowitz's (1991) Relationship Questionnaire, and Collins and Read's (1990) Adult Attachment Scale. Each of the thirty statements is reflective of one of the four attachment styles (secure, fearful, preoccupied and dismissing). Participants rate on a five point scale from "1" (*Not at all like me*) to "5" (*Very much like me*) the extent to which each statement best describes their characteristic style in close relationships. Scores for each attachment style are derived by taking the mean of the four or five statements which represent each separate attachment prototype. Like the RQ, this creates four continuous variables, each corresponding to one of the four attachment styles.

Attachment ratings on both the RQ and the RSQ are combined to form a single, composite measure of attachment for each attachment style. The scores for each

of the four attachment styles on both the RSQ and RQ are transformed to z scores. The mean of the two z-transformed scores for each attachment category (one from the RQ and one from the RSQ) is then taken. Attachment style is categorically determined for each participant based on the attachment category with the highest mean parallel z-transformed score (Ciechanowski, Walker, Katon & Russo, 2002; Ognibene & Collins, 1998).

The RQ and the RSQ have been used widely as a measure of attachment in the literature (Ciechanowski, Walker, Katon & Russo, 2002; Feeney, Peterson, Gallois & Terry, 2000; Klein, 2001; Marques, 2006; McLewin & Muller, 2006; Nakash-Eisikovits *et al*, 2002; Rabung, Ubbelohde, Kiefer & Schauenburg, 2004), and have also been extensively used with an adolescent population (Karavasilis, Doyle & Markiewicz, 2003; Meeker, 2002; Merscham, 2002; Nakash-Eisikovits *et al*, 2002; Wallace, 2003). Scharfe and Barthomew (1994) present evidence which indicates that the RQ shows moderately high stability over time; with test – retest reliability over an eight month period for each subscale ranging between 0.49 to 0.71; and mean stability coefficients across the four attachment groups of 0.53 for women and 0.49 for men (Scharfe & Bartholomew, 1994). Bartholomew and Horowitz (1991) present detailed data which indicates that the four attachment categories proposed in the self-report RQ have good convergent validity with both friend-report and interview ratings (interested readers should consult Bartholomew & Horowitz (1991) for data and in-depth analysis of this).

2.3.2 - The World Health Organization Quality of Life Short Measure (WHOQOL Bref) (See Appendix 8):

The WHOQOL Bref provided a measure of perceived quality of life. The World Health Organization (WHO) originally developed the World Health Organization Quality of Life (WHOQO-100) instrument in 1995 (The WHOQOL group, 1998). The WHOQOL-100 is a one hundred item instrument measuring perceived quality of life. The WHOQOL-100 was developed collaboratively and simultaneously by researchers in fifteen areas throughout the world, allowing comparison across cultural settings (Harper & Power, 1998). The WHOQOL-100 has six domains (physical, psychological, independence, social, environmental and spiritual) that tap into twenty four facets of quality of life (Coons & Shaw, 2005). The WHOQOL Bref was developed to provide a reliable and valid measure of quality of life that was not as lengthy and time consuming to administer as the WHOQOL-100 (Harper & Power, 1998).

The WHOQOL Bref has four domains (physical, psychological, social and environment) following the combination of both the physical and independence domains from the WHOQOL-100 to create one domain; and also the spiritual and psychological domains from the WHOQOL-100 to create a further single domain. Twenty four facets were created by taking one item from each of the twenty four facets originally available in the WHOQOL-100 (Coons & Shaw, 2005). The resultant WHOQOL Bref questionnaire has twenty six items; twenty four from the

twenty four facets, and one item each for general health and overall quality of life (Coons & Shaw, 2005) (See Figure 2 below).

DOMAIN	***Facets incorporated within domains***
1. PHYSICAL HEALTH	*Activities of daily living.* *Dependence on medicinal substances and medical aids.* *Energy and fatigue.* *Mobility.* *Pain and discomfort.* *Sleep and rest.* *Work capacity.*
2. PSYCHOLOGICAL	*Bodily image and appearance.* *Negative feelings.* *Positive feelings.* *Self-esteem.* *Spirituality / religion / personal beliefs.* *Thinking, learning, memory and concentration.*
3. SOCIAL RELATIONSHIPS	*Personal relationships.* *Social support.* *Sexual activity.*
4. ENVIRONMENT	*Financial resources.* *Freedom, physical safety and security.* *Health and social care: accessibility and quality.* *Home environment.* *Opportunities for acquiring new information and skills.* *Recreation and leisure activities.* *Physical environment (pollution / noise / traffic / climate).* *Transport.*

Figure 2(above) – Facets incorporated within WHOQOL Bref domains (adapted from World Health Organisation, 1996b).

The WHOQOL-Bref takes around five to ten minutes to administer. Individuals are required to select whether or not each item is reflective of themselves in the last two weeks on a five point response scale. A higher score denotes a better perceived QOL. Some questions are negatively framed, so these responses are reversed scored. A total score is derived from the summation of scores on all twenty six items. A domain score for each of the four domains is derived from the items within each domain. Raw scores for each of the four domains are converted to a 0 – 100 scale, where a higher score denotes a better perceived quality of life. A total score captures an individual's overall perceived QOL, and individual domain scores capture differential functioning across various aspects of life. Domain scores allowed exploration of whether different elements of perceived QOL (physical, psychological, social relationships and environment) are separately associated with both DSH in adolescence and attachment style.

For the purposes of this study, the WHOQOL Bref had one question removed. This was question number twenty one - "How happy are you with your sex life?". This question was removed as it was considered developmentally inappropriate for younger adolescents participating in the study. The WHOQOL Bref directions on administration and scoring (WHO, 1996) state that if one question is incomplete or missing, then the mean score of the other items in the particular domain that incorporates the missing question should be given as the score to the missing question. This scoring method was used to compensate for removing this question in order to prevent disturbing the psychometric properties of the scale.

The WHOQOL Bref is available in twenty alternative languages (Coons & Shaw, 2005) and has good reliability and validity (The WHOQOL group, 1998, Harper & Power, 1998). Domain scores produced by the WHOQOL Bref have been shown to correlate at around 0.9 with WHOQOL-100 scores (Harper and Power, 1998), indicating good convergent validity. The WHOQOL Bref has been used in research settings with an adolescent population and has been shown to have good reliability and validity with this group (Izutsu, Tsutsumi, Islam, Matsuo, Yamada, Kurita & Wakai, 2005). Izutsu *et al* (2005) provide psychometric data that indicates that the WHOQOL Bref has good internal consistency (Cronbach's alpha = 0.87 for WHOQOL Bref total score) and test – retest reliability (Pearson product moment correlation co-efficient of the first and second administrations for each domain and the total score ranging between 0.67 – 0.84 ($p < 0.01$ for all)). As a measure of discriminant validity, Izutsu *et al* (2005) conducted analyses of covariance which revealed that all domains and the total score showed significant discriminant validity ($p < 0.01$ for all).

2.3.3 - Beck Depression Inventory (BDI-II) (See Appendix 9) / Children's Depression Inventory (CDI) (See Appendix 10):

The BDI-II and the CDI provided a measure of presence of depressive symptoms. Depression has been shown to be strongly associated with DSH (McLaughlin, Miller & Warwick, 1996), and accordingly, the BDI-II and the CDI were administered to control for the impact of depression on likelihood of engaging in DSH. The Beck Depression Inventory, Second Edition, (BDI-II) was administered

with participants aged over 16. The BDI-II is a twenty one item self report instrument for measuring the severity of depression in adolescents and adults aged between thirteen and eighty years old (Beck, Steer & Brown, 1996). The original version of the BDI was introduced in 1961 and has been subsequently revised on several occasions. The BDI-II was introduced in 1996. The BDI takes approximately five to ten 10 minutes to complete. Participants are required to read twenty one groups of statements and for each group of statements rate on a four point scale ranging from "0" to "3" the one statement that best describes the way that they have been feeling for the last two weeks. A total score out of sixty three is obtained by summing the ratings of the twenty one items. Total scores between 0 – 13 indicate minimal depressive symptoms, 14 – 19 indicates mild depressive symptoms, 20 – 28 indicates moderate depressive symptoms, and 29 – 63 indicates severe depressive symptoms.

The BDI-II is widely used in both clinical and research settings and has been shown to be a reliable and valid self report measure of depressive symptoms in an adolescent population (Beck *et al*, 1996; Steer, Kumar, Ranieri & Beck, 1998). Beck *et al* (1996) provide psychometric data from a sample of individuals aged between thirteen to eighty six years old that indicates that the BDI – II has good internal consistency (coefficient alpha = 0.92 for outpatients and 0.93 for students); and test – retest reliability (correlation between first and second administration = 0.93 ($p < 0.001$)). As evidence of the convergent and discriminant validity of the BDI-II, Beck *et al* (1996) report significant correlations

(ranging from 0.37 – 0.71 ($p < 0.001$ for all)) between the BDI-II total score and scores on several other self report measures assessing level of depressive symptoms.

The Children's Depression Inventory (CDI) (Kovacs, 1992) was administered with participants aged under sixteen years old. The CDI is a twenty seven self rated symptom oriented scale suitable for school aged young people (Kovacs, 1992). The CDI was originally developed in 1977 to measure depressive symptoms in children and adolescents and has been revised since this original version. The CDI was chosen as a measure of depression in individuals aged between 13 – 16 rather than the BDI-II because the CDI was considered to have more developmentally appropriate language for this age group than the BDI-II.

The CDI takes around five to ten minutes to administer. Participants are required to read twenty seven groups of three sentences; and pick the one sentence from each group of three sentences that best describes the way they have been feeling over the past two weeks. The separate item scores are then added up to produce a total score which can be converted to a t-score and interpreted accordingly from the category "very much below average" to the category "very much above average" with seven other interpretive categories between these ranges. A total score was used for the purpose of this study; however sub totals may also be obtained for the factor scales of negative mood, interpersonal problems, ineffectiveness, anhedonia and negative self esteem if required.

The CDI has been shown to be a reliable and valid measure of depressive symptoms in individuals aged between 13 – 16 years old (Kovacs, 1992). Kovacs (1992) provides a summary of psychometric data from several studies that shows that the alpha coefficients of reliability that have been reported for the CDI range from 0.71 to 0.89 indicating that the CDI has good internal consistency. In terms of test – retest reliability, data from several studies indicates that correlations between the first and second administration of the instrument range from 0.38 to 0.87, suggesting that the CDI has an acceptable level of stability (Kovacs, 1992). As an indication of the validity of the measure, Kovacs (1992) cites psychometric data that demonstrates that the CDI is significantly correlated with other self report measures of depressive symptoms and self concept (r = 0.66 – 0.72). The CDI has been used in both clinical and research settings with individuals aged between 13 and 16 (Sitarenios & Stein, 2004).

For the purposes of the present study, participants were categorised into having either mild, moderate, severe, or no depressive symptoms based on their CDI / BDI scores. Individuals with a CDI score less than 55 or a BDI score less than 14 were not considered to have depressive symptoms. The category of mild depressive symptoms incorporated individuals with a CDI score of 56 - 65 or a BDI score of 14 - 19. The category of moderate depressive symptoms incorporated individuals with a CDI score of 66 - 70 or a BDI score of 20 - 28. Finally, the category of severe depressive symptoms incorporated individuals with a CDI score of 70 and above or a BDI score of 29 and above.

2.3.4 - The Deliberate self harm questionnaire (See Appendix 11):

The Deliberate self harm questionnaire provided a measure of whether or not an individual engages in DSH, the frequency and nature of any self harm, and potential triggers and reasons for the self harm. The Deliberate self harm questionnaire was originally devised at the Young People's Unit, Edinburgh for clinical use (M.Schwannauer, personal communication, May 2006). The Deliberate Self Harm questionnaire has six sections. Individuals who do not engage in DSH are only required to complete section one. Individuals who do engage in DSH complete all six sections. In section one, individuals are required to read descriptions of different types of self harm (e.g. *"Intentionally cut your body" / "Intentionally burned or scalded yourself")* and rate whether or not they have engaged in this behaviour on a five point scale from "1" *(Never in the last year)* to "5" *(Often – at least once a week)*. Section two enquires about whether they are currently receiving help for their DSH. In section three, respondents are required to state whether or not a number of different events (e.g. "*Had an argument with someone close to you")* have happened in the period immediately preceding their DSH. In sections four and five, individuals are asked to tick whether a number of statements regarding self harm (e.g. *"I feel sad and depressed before injuring myself")* apply to themselves *"never", "occasionally"* or *"often".* Finally, section six gives respondents the chance to describe in their own words why they engage in DSH. This open question allows young people to flag up any issues that they feel are not covered adequately in the questionnaire. The wording of the questionnaire was adapted slightly for the purposes of this

research study. The psychometric characteristics of the Deliberate Self Harm questionnaire in an adolescent population have been confirmed by preliminary pilot studies which are awaiting publication (M. Schwannauer, personal communication, May 2006).

2.3.5 - Basic Demographic Information:

Basic demographic information (ethnic origin, gender and age in months) was also collected to control for the possible impact of this in subsequent analysis.

2.3.6 – Pilot study

Prior to being used in the present study, the RQ / RSQ; WHOQOL-Bref; BDI and CDI; and Deliberate Self Harm questionnaire were piloted with one young person attending the Young People's Department and currently engaging in DSH, in order to ascertain face validity.

2.4 - Procedure:

Potential participants were identified by two methods. Potential participants for Group A (13 – 19 year old clinic attendees who had engaged in DSH in the last year) were identified by clinical staff members from their current caseloads. Potential participants for Group B (control group, 13 – 19 year old clinic attendees with no past or current history of DSH) were randomly identified from the client databases at the Young People's Department, Aberdeen.

2.4.1 - Identification of potential participants.

2.4.1.1 - Group A (13 – 19 year old clinic attendees who had engaged in DSH in the past year).

All clinical staff at the Young People's Department, Aberdeen; and at the Rowan Centre, Elgin, were asked to identify the names and addresses of any individuals who they were currently seeing who had engaged in DSH in the last year. Clinical staff were given a copy of the present study's definition of DSH (*Intentionally inflicted self injurious behaviours with a non-fatal outcome (incorporating intentionally cutting, scratching, hitting, bruising, scalding or burning ones own skin; taking an overdose of drugs; or ingesting toxic substances) not occurring in the context of a general cognitive impairment , with a non-fatal outcome).* The therapist / clinician currently seeing the young person was asked to use their clinical judgement about the suitability of the young person potentially participating in the study.

The departmental client information databases were then used to produce a list of all young people who were currently open to the departments and engaging in DSH (identified by the presence of ICD-10 diagnostic codes X60 – X84 (World Health Organisation, 1994)). The list of potential participants who had been identified by clinical staff as engaging in DSH was then double checked against the lists generated by the departmental databases to ensure that all potential participants had been identified. The departmental database lists matched that

generated by the clinicians. Sixty one young people who currently engaged in DSH were identified as being suitable to be invited to participate in the study.

2.4.1.2 - Group B (Control group, consisting of 13 – 19 year old clinic attendees with no history of DSH).

The names and addresses of potential participants for Group B were randomly identified from client databases as the first twenty referrals to the Young People's Department in four subsequent calendar months (October 2005, November 2005, December 2005, January 2006), which were still open to the department. The therapist / clinician currently seeing the young person was asked to use their clinical judgement about the suitability of the young person potentially participating in the control group of the study and confirm that to the best of their knowledge the young person did not have a past or current history of engaging in DSH. Eighty young people were identified this way.

2.4.2 - Recruitment of participants.

Potential participants in both groups were sent a letter signed by their therapist / clinician inviting them to participate in the study (See Appendix 1), along with an information sheet outlining the nature of the study (See Appendices 2a and 2b), and a consent form (See Appendix 3). Parents / guardians of all potential participants were also sent an invitation letter signed by the young person's therapist / clinician (See Appendices 4), an information sheet detailing the nature of the study (See Appendix 5a and 5b), and a consent form (See Appendix 6).

Invitation letters asked individuals who were willing to participate to indicate this to their own therapist / clinician at their next clinical appointment. The individual's therapist / clinician then informed the researcher of the names of all individuals who had expressed willingness to participate. A total of one hundred and forty one potential participants were identified and invited to take part in the study. Thirty eight individuals agreed to take part in the study with parental consent, indicating a twenty seven percent response rate.

2.4.3 - Informed Consent

All individuals who had expressed a willingness to participate were required to complete a consent form indicating that –

- They had read the participant information sheet about the study and had understood this.
- They had had the opportunity to consider the information, and had been given the chance to contact the researcher to ask any questions they had.
- They had had all their questions answered in a way that they understood.
- They understood that they did not have to take part in the study.
- They were aware that they could change their mind and withdraw from participating at any time without giving any reason.
- They agreed to the researchers informing their GP should the presence of any physical or mental health problems become evident from their participation in the study.
- They were happy to take part in the study.

Additionally, participants were required to give their GP's name and address and consent to their GP being informed that they were participating in the research. Once a signed consent form indicating willingness to participate in the research was obtained from potential participants, each individual's GP was sent a standard letter stating that their patient had agreed to take part in the research study, along with an information sheet about the study.

2.4.4 - Data Collection

An individual appointment time to meet with the researcher was sent to all the young people who had agreed to participate with parental consent. This appointment was separate from the young person's appointment with their therapist / clinician to ensure that the research did not encroach on the individuals clinical appointments. The appointment lasted approximately thirty minutes and took place at either the Young People's Department or the Rowan Centre (both NHS premises). Consent forms were obtained from the young person and their parents / guardian at this appointment time. Participants were required to complete the four self report measures (RQ / RSQ; WHOQOL Bref; BDI (if aged over 16) or CDI (if aged under 16); and the Deliberate Self Harm Questionnaire) at this appointment time. The researcher was present while the participants completed the questionnaires and available afterwards to discuss any issues that may arise.

After completing the questionnaires participants were given the opportunity to ask questions; told that they could contact the chief investigator in three months time if they wished to receive a summary of the results of the study; and thanked for their participation.

2.4.5 - Confidentiality:

Individual identification numbers were used to label all the questionnaires to ensure anonymity. The list of names and associated identification numbers, and the participant and parental consent forms were stored securely and separately from the anonymous questionnaires, both within the Young People's Department.

2.4.6 - Data Analysis:

Data analyses were carried out using SPSS (Windows) Version 11.5.

2.4.6.1 - Variables

The dependent variable was "Experimental Group" (Categorical data) - (Group A - currently engaging in DSH *versus* Group B (Control) – no DSH).

The independent variables were –

(a) "Attachment Style" (Categorical data) – (Secure, Insecure - Fearful, Insecure – Preoccupied and Insecure – Dismissing).

(b) "Perceived Quality of Life" (Interval data)

(i) Total overall score,

(ii) Domain 1 (Physical Health) score,

(iii) Domain 2 (Psychological) score,

(iv) Domain 3 (Social Relationships) score,

(v) Domain 4 (Environment) score).

(c) "Level of depression" (Categorical data) – (None, Mild, Moderate and Severe).

(d) "Age in months" – (Interval data).

(e) "Gender" – (Categorical data) – (Female and Male).

2.4.6.2 – Sample size estimation

In terms of the statistical tests used in this study, Cohen (1992) suggests that to detect large effect sizes at power = 0.80 for alpha = 0.05 for independent sample t – tests and Chi Square statistical tests (1d.f.), a sample size of 26 is required. To detect a large effect size at power =0.80 for alpha = 0.05, for logistic regression with two independent variables, a sample size of 30 is suggested (Cohen, 1992). Calculating estimated sample size using the GPOWER computer package (Faul & Erdfelder, 1992) produced similar sample size estimations.

2.4.6.3 - Data Analysis – Between Groups

The characteristics and distribution of the data set were explored prior to conducting formal statistical analyses. The relationships between variables were initially examined individually, then together as interactive factors. Categorical data were analysed using cross-tab analyses with the Chi Square statistic reported. As a measure of the strength of association, the associated statistics Phi coefficient and Cramer's V were utilised. Continuous data were analysed

using independent sample t-tests. Where it was considered that data may not be normally distributed (as evidenced by the skew index divided by it's standard error being less than 1.96), the non parametric counterpart of the independent samples t-test, the Mann-Whitney U test, was used to confirm the t-test results. Point biserial correlations were employed to supplement t-test data. Logistic regression analyses were conducted to determine the predictive value of attachment style and perceived QOL (independent variables) on whether an individual is at greater risk of engaging in DSH (dependent variable), whilst controlling for age, gender, and level of depression.

2.4.6.4 - Data Analysis – Within Group A

The Deliberate Self Harm questionnaire provided a measure of whether or not an individual engages in DSH, the frequency and nature of any DSH, and potential triggers and reasons for the DSH. Individuals in Group B simply completed the first section of this questionnaire (whether or not they engaged in DSH), however, individuals in Group A completed the whole questionnaire, providing information about their frequency and method of DSH. This data was analysed descriptively. An informal qualitative approach using line by line coding was used to analyse the open question at the end of the Deliberate Self Harm Questionnaire which asked participants to state in their own words why they engaged in DSH.

2.5 - Ethical Approval / Issues

The study received ethical approval from the Grampian Local Ethics Committee on 9th February 2006 (See Appendix 12a). Approval for the study to go ahead was given by the local NHS Research and Development office on 24th February 2006 (See Appendix 13). Several potential ethical issues were foreseen prior to conducting this study. These issues, and the steps taken to accommodate them, are outlined below.

The first potential ethical issue foreseen was the possibility of participants experiencing distress during or after completing the questionnaires in the study which included some potentially sensitive issues (particularly the questionnaire regarding deliberate self harm). It is worth noting that research in this context suggests that discussing self harm with health care professionals is unlikely to cause either increased distress or an increase in self-harming behaviours (Taiminen *et al*, 1998). Nevertheless, the likelihood of discomfort being experienced by participants was minimised in a number of ways. Primarily, participants were only given the opportunity to participate in the study on the basis of their therapist's / clinician's clinical judgement that participation would be unlikely to cause them distress. Additionally, all participants had an individual appointment with the researcher. The researcher was present when participants completed the questionnaires and available after their appointment to discuss any issues that may have arisen. Participants were given the researchers contact details and it was made clear that they could contact her for advice and support in

relation to issues arising from participating in the study. No participants sought help or advice from the researcher following completion of the study.

The second potential ethical issue foreseen was the disclosure of DSH or other mental health difficulties in individuals in Group B (the control group) which had not previously been identified. To accommodate this potential issue, prior to completing the questionnaires, all participants were asked to consent to the researcher informing their GP immediately if (a) participants disclosed that they were engaging in DSH for which they were not currently receiving help (b) the presence of any physical or mental health problems became evident from participation in the study, or (c) they disclosed any other information which gave rise to serious concern on the part of the researcher about the safety of the participant or others.

A third potential ethical issue foreseen was that of informed consent for participants aged under sixteen years old. This issue was minimised by giving clear and developmentally appropriate information about the study to participants in advance of them being asked to participate. It was also a requirement of the study that all participants have parental consent to take part in the research study, as well as completing consent forms themselves. The voluntary and non-detrimental effect of choosing not to participate in the study was emphasised.

Finally, it was foreseen that young people may perceive pressure to participate in the study in case it had a detrimental effect on their clinical treatment within NHS Grampian. To accommodate this, participant and parental invitation letters and information sheets explaining the purpose of the study emphasised that choosing not to participate would have no adverse effects on the young person and no effect on current treatment. This was also verbalised to the young person by both their therapist / clinician and the researcher. Furthermore, participation in the research took place at a separate appointment time with the researcher, so as not to encroach on the young person's clinical appointments.

2.6 - Difficulties Recruiting Participants:

Due to initial difficulty recruiting participants, two further measures were taken to attempt to increase the numbers of participants in the study. The Grampian Research Ethics Committee was contacted again and an application to make two major amendments to the original study was submitted on May 10th 2006.

The first of these amendments was a proposal to approach Penumbra Self Harm Project to invite young people from this project to participate in the study. Penumbra is a Scottish voluntary organisation working in the field of mental health, which provides a range of person-centred support services for adults and young people. Penumbra Self Harm Project provides support to young people aged between sixteen and twenty four years old. The young people who attend

Penumbra Self Harm Project do so in confidence without their parents necessarily being aware of their contact with the service.

The second amendment requested that the researcher be able to make a follow up telephone call to ask potential participants who had already received an invitation letter by mail if they wished to be involved in the study or not.

Unfortunately, on 31st May 2006, Grampian Local Ethics Committee rejected both proposals for major amendments to the study (Appendix 12b). The request for the researcher to make a follow up telephone call to potential participants was rejected, and it was suggested that potential participant's clinicians / therapists could make a follow up phone call. However, this was considered by the researcher as being too time-consuming for other team members, so was not pursued. The request to contact Penumbra was rejected on the grounds that parents must be informed of the young person's participation in the study, which would be contrary to Penumbra's policies.

RESULTS

3.1 - Respondents

One hundred and forty one adolescents attending mental health services were invited to participate in the study. Thirty eight young people agreed to take part with parental consent, giving a response rate of twenty seven percent (27%).

3.2 - Characteristics of each group

3.2.1 - Group A – Twenty participants were included in Group A (13 – 19 year olds who had engaged in DSH in the past year). There were three males (15%) and seventeen (85%) females in this group. The ages of participant's in this group ranged from thirteen years, six months old (162 months) to eighteen years, two months old (218 months) with the mean age of participant's in this group being sixteen years, one month (193 months) (standard deviation one year six months (18 months)). All participants in Group A were of white British ethnic origin.

3.2.2 - Group B – Eighteen participants were included in Group B (control group, consisting of 13 – 19 year old mental health clinic attendees who had no current or past history of DSH). There were five (28%) males and thirteen (72%) females in this group. The ages of participant's in this group ranged from thirteen years two months (158 months) to seventeen years nine months (213 months), with the mean age of participant's in this group being fifteen years five months (185

months) (standard deviation one year three months (15 months)). All participants in Group B were of white British ethnic origin.

3.3 - Group Comparison

3.3.1 - Age and Gender

Exploratory statistics and an independent samples t – test were used to investigate the influence of the demographic variables of age and gender on the characteristics of each group. Exploratory statistics revealed that both groups were demographically comparable in terms of age (See Figure 3a below) and gender (See Figure 3b below). A t-test comparing the age in months between participants in Group A and Group B confirmed that, in terms of age, there was not a significant difference between the groups ($t=1.477$ (36), $p > 0.05$).

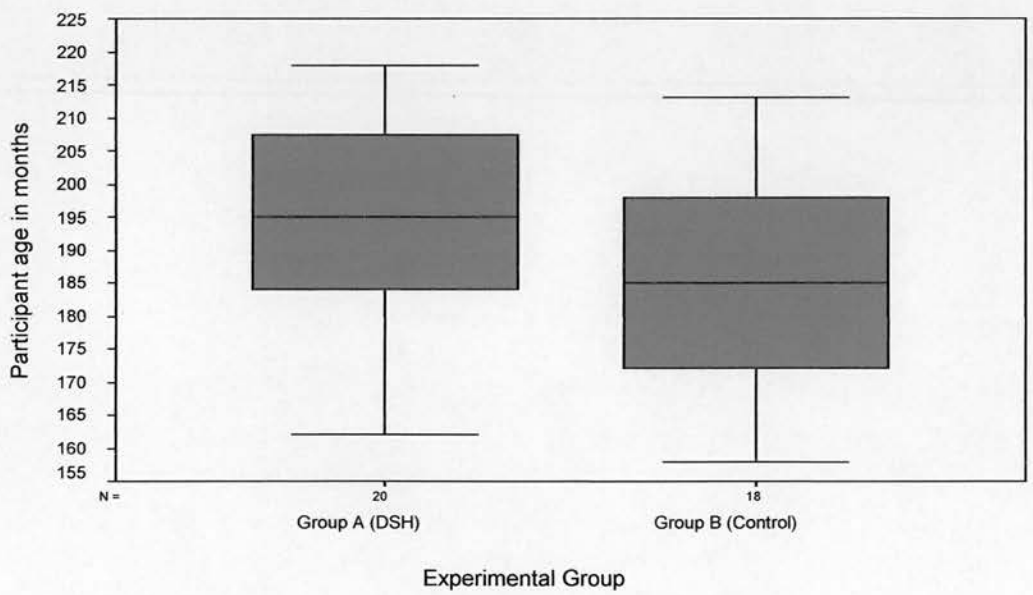


Figure 3a (above) – Boxplot of participant's age in months categorised by experimental group

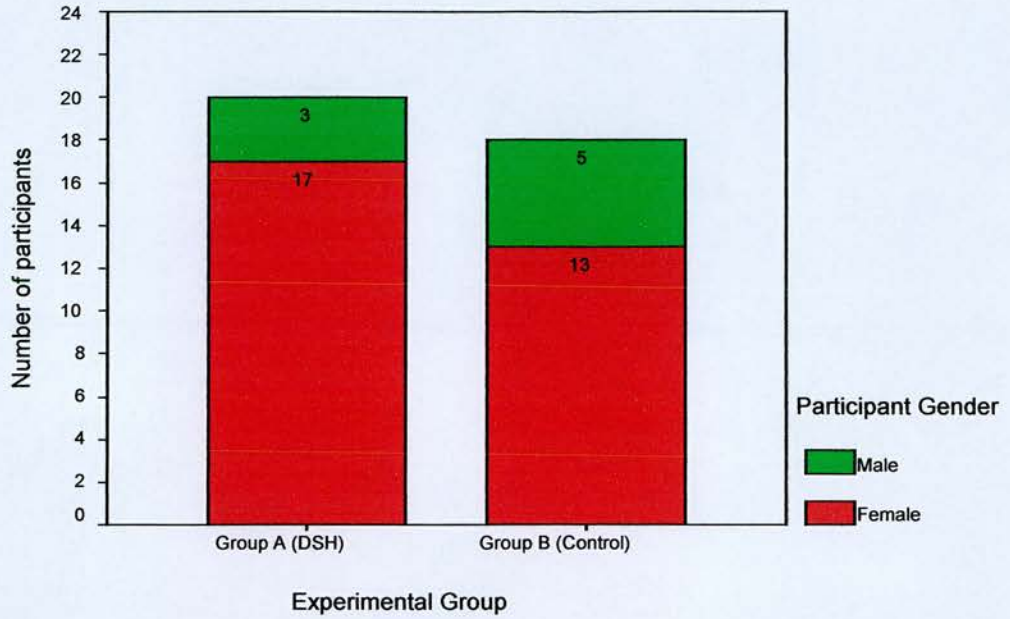


Figure 3b (above) – Stacked bar graph of the number of participants of each gender in each experimental group

3.3.2 - Level of depression

The level of depression reported by participants in each group, as measured by the BDI – II or the CDI, was explored using cross-tab analyses with the Chi Square statistic reported. A 2 x 4 Chi Square test was employed (using the Exact method due to small sample size) to explore the relationship between "experimental group" (currently engaging in DSH *versus* control – no DSH) and "level of depression" (none *versus* mild *versus* moderate *versus* severe). As a measure of the strength of association, the associated statistics Phi coefficient and Cramer's V were utilised. A significant relationship was found between experimental group and level of depression in the 2 x 4 Chi Square test (Pearson's Chi Square = 30.869, (d.f. = 3, N = 38), $p < 0.001$; Phi value = 0.901, $p = < 0.001$; Cramer's V value = 0.901, $p = < 0.001$).

As a proportion of the cells in the 2 x 4 table had an expected count below 5, the formally separate categories of 'mild', 'moderate' and 'severe' within the variable "level of depression" were collapsed to create a single category of 'depressive symptoms'; thus creating a dichotomous variable ("none" versus "depressive symptoms") and allowing a 2 x 2 Chi Square test to be employed to explore the relationship between experimental group (currently engaging in DSH *versus* control – no DSH) and level of depression (none *versus* depressive symptoms). A significant relationship was found between experimental group and level of depression in this 2 x 2 Chi Square test (Pearson's Chi Square = 23.649 (d.f. = 1, N = 38), $p < 0.001$; Phi value = - 0.789, $p = < 0.01$; Cramer's V value = 0.789, $p = < 0.01$). A bar graph of this relationship reveals that participants in Group A were significantly more likely than those in Group B to report the presence of depressive symptoms (See Figure 3c below).

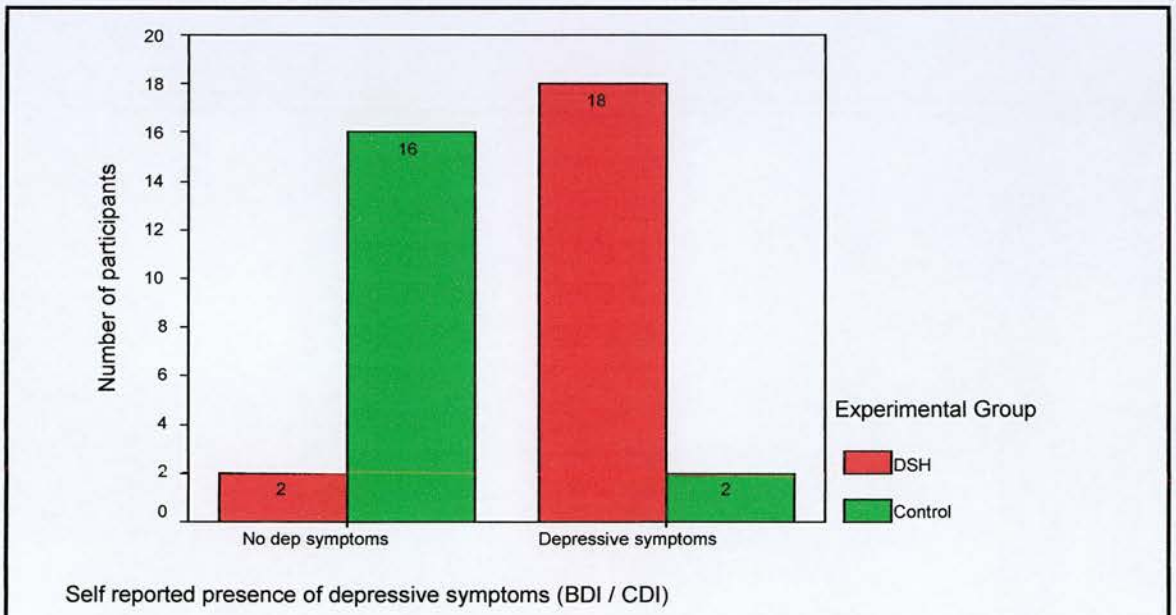


Figure 3c (above) - Bar graph of number of participants in each group with and without self reported depressive symptoms (BDI / CDI).

3.3.3 - Mental Health Diagnoses

Background diagnostic characteristics of participants in each group are reported in detail in the Methodology section. The types of mental health difficulties present in participants in each group are presented in Figure 3d below. Participants in both groups had a variety of different primary mental health diagnoses present (See Figure 3d below). In line with the increased reporting of presence of depressive symptoms in participants in Group A, depressive disorders were slightly more prevalent in Group A. Family dysfunction was also more prevalent in Group A. Anxiety disorders and OCD were more prevalent in Group B (See Figure 3d below).

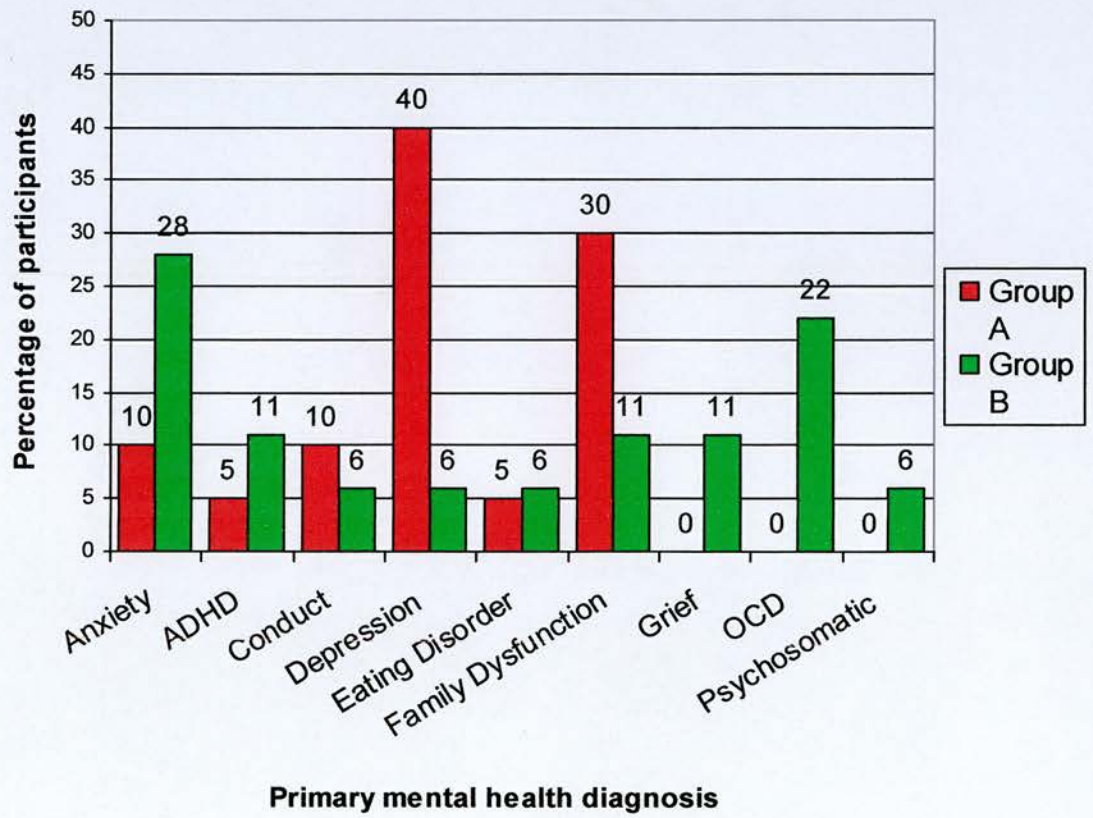


Figure 3d (above) – Percentage of participants in each experimental group with different primary mental health diagnoses.

3.4 - Data Analysis – Between groups.

3.4.1 - The relationship between DSH and attachment style in adolescence.

Because the variables of "experimental group" and "attachment style" are both categorical, Chi Square statistical tests were used to explore the relationship between these variables. A 2 x 4 Chi Square test was employed (using the Exact method due to small sample size) to explore the relationship between experimental group (currently engaging in DSH *versus* control – no DSH) and attachment style (secure *versus* Insecure - fearful *versus* Insecure – preoccupied *versus* Insecure – dismissing). As a measure of the strength of association, the associated statistics Phi coefficient and Cramer's V were utilised.

A significant relationship was found in the 2 x 4 Chi Square test (using the Exact method due to small sample size) exploring the relationship between experimental group and attachment style (Pearson's Chi Square = 20.602, (d.f. = 3, N = 38), $p < 0.001$; Phi value = 0.736, $p = < 0.001$; Cramer's V value = 0.736, $p = < 0.001$).

As a proportion of the cells in the 2 x 4 table had an expected count below 5, the formally separate categories of 'Insecure – fearful', 'Insecure – preoccupied' and 'Insecure – dismissing' within the variable "attachment style" were collapsed to create a single category of 'insecure'; thus creating a dichotomous variable ("secure" versus "insecure") and allowing a 2 x 2 Chi Square test to be employed

to explore the relationship between experimental group (currently engaging in DSH *versus* control – no DSH) and attachment style (secure versus insecure).

Attachment style was treated as a dichotomous variable (secure versus insecure) for the remainder of statistical analyses because of the low number of individuals in both the Insecure – preoccupied, and Insecure – dismissing categories (See Figure 4 below).

	CATEGORICAL ATTACHMENT STYLE			
	Secure	**Insecure - Fearful**	**Insecure – Preoccupied**	**Insecure - Dismissing**
COUNT	15	16	3	4

Figure 4 (above) – Table showing count of number of participants with each categorical attachment style.

A significant relationship was found in the 2 x 2 Chi Square test analysing the relationship between experimental group (Group A and Group B) and overall attachment style as a dichotomous variable (secure and insecure). (Pearson's Chi Square = 15.352 (d.f. = 1, N = 38), $p < 0.001$; Phi value = - 0.636, $p = < 0.01$; Cramer's V value = 0.636, $p = < 0.01$). Figure 5a (below) shows the observed frequencies for each category. A bar graph of this relationship reveals that Group A were significantly more likely than Group B to have an insecure attachment style (See Figure 5b below). This supports the hypothesis that engaging in DSH in adolescence is associated with an insecure attachment style.

		Overall Attachment Style (Secure / Insecure)		Total
		SECURE	INSECURE	
Experimental Group	Group A (DSH)	2	18	20
	Group B (Control)	13	5	18
Total		15	23	38

Figure 5a (above) – Table of observed frequencies for each category of attachment style (Experimental Group and overall Attachment Style)

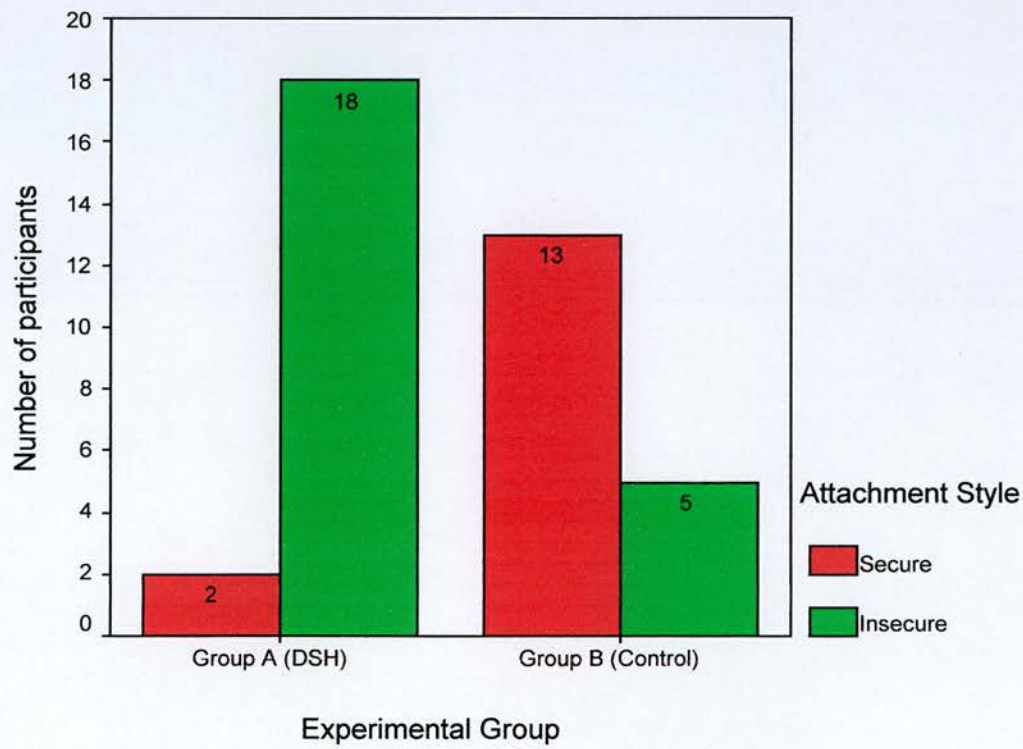


Figure 5b (above) – Bar graph of number of participants in each group with secure and insecure attachment styles

3.4.2 - The Relationship between DSH and perceived QOL in adolescence

Independent sample t-tests were used to explore the relationship between the variables of experimental group (Group A - currently engaging in DSH *versus* Group B (control) – no DSH) and each of the areas of perceived QOL (Total overall perceived QOL score, Domain 1 (Physical Health) score, Domain 2 (Psychological) score, Domain 3 (Social Relationships) score, and Domain 4 (Environment) score). Exploratory data analysis in SPSS found that the skew index divided by its standard error was less than 1.96 for the majority of conditions, thus confirming that the data were distributed within the bounds of normality. However, for the control group for domain 1, exploratory data analysis revealed that the data in this condition were skewed. Accordingly, the non parametric counterpart of the independent samples t-test, the Mann-Whitney U test, was used to confirm the t-test result for this comparison only. Point biserial correlations were employed to supplement data investigating the relationship between experimental group and perceived QOL.

Independent sample t-tests exploring the relationship between the variables of experimental group and each of the areas of perceived QOL showed significant relationships between experimental group and all five areas of perceived QOL. Homogeneity of variance for each t-test was confirmed by Levene's Test for homogeneity of variance. Individuals in Group A (currently engaging in DSH) reported a significantly lower perceived QOL in their Total overall perceived QOL score ($t = -6.439$, (36), $p = < 0.001$) (See Figure 6a below); Domain 1 (Physical

Health) score ($t = -5.082$, (36), $p = < 0.001$) (See Figure 6b below); Domain 2 (Psychological) score ($t = -6.458$, (36), $p = < 0.001$) (See Figure 6c below); Domain 3 (Social Relationships) score ($t = -3.427$, (36), $p = < 0.001$) (See Figure 6d below); and Domain 4 (Environment) score ($t = -6.363$, (36), $p = < 0.001$) (See Figure 6e below). A Mann-Whitney U test confirmed the independent samples t-test result for the comparison between experimental group and Domain 1 (Physical health) score; confirming that individuals engaging in DSH reported a significantly lower perceived quality of life in terms of Domain 1 (Physical Health) score (Mann-Whitney $U = 41.5$, $Z = -4.067$, $p < 0.001$).

Point biserial correlations also confirmed the presence of a significant association between experimental group and reported level of perceived QOL in terms of Total overall perceived QOL score ($r = 0.732$, $p < 0.001$) and each of the Domain scores (Domain 1 ($r = 0.646$, $p < 0.001$), Domain 2 ($r = 0.733$, $p < 0.001$), Domain 3 ($r = 0.496$, $p < 0.01$) and Domain 4 ($r = 0.728$, $p < 0.001$)).

The results of independent samples t tests, point biserial correlations and Mann-Whitney U tests all support the hypothesis that engaging in DSH in adolescence is associated with a lower perceived level of quality of life.

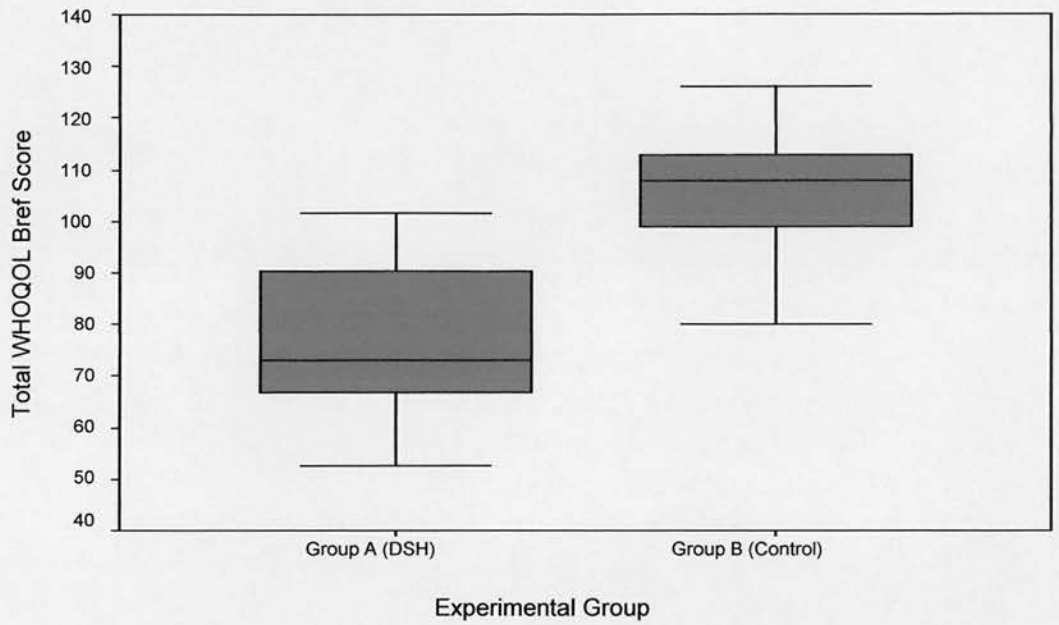


Figure 6a (above) – Boxplot of participant's total WHOQOL Bref score, categorised by experimental group

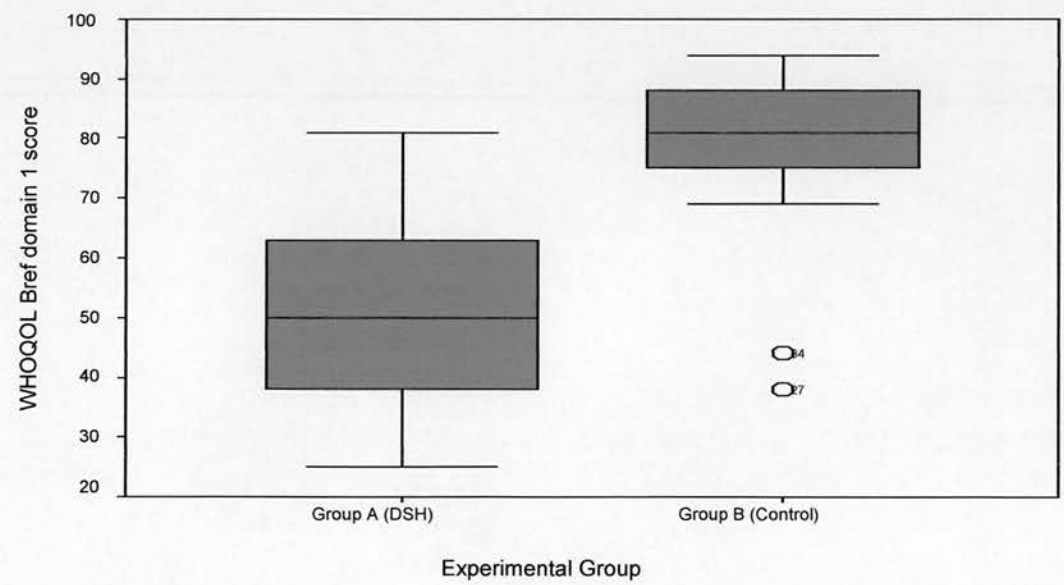


Figure 6b (above) – Boxplot of participant's Domain 1 (Physical Health) WHOQOL Bref score, categorised by experimental group

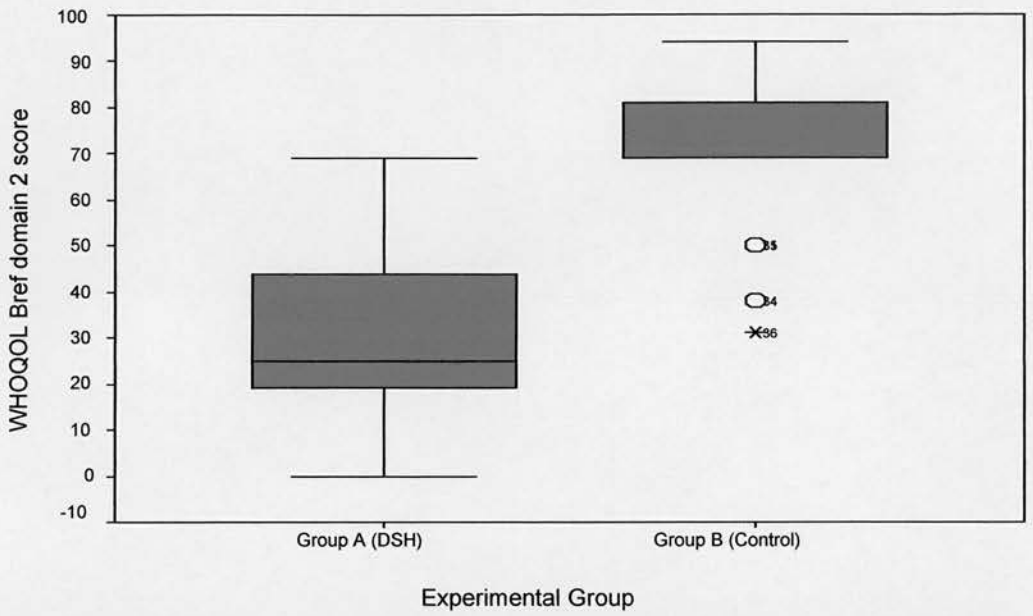


Figure 6c (above) – Boxplot of participant's Domain 2 (Psychological) WHOQOL Bref score, categorised by experimental group

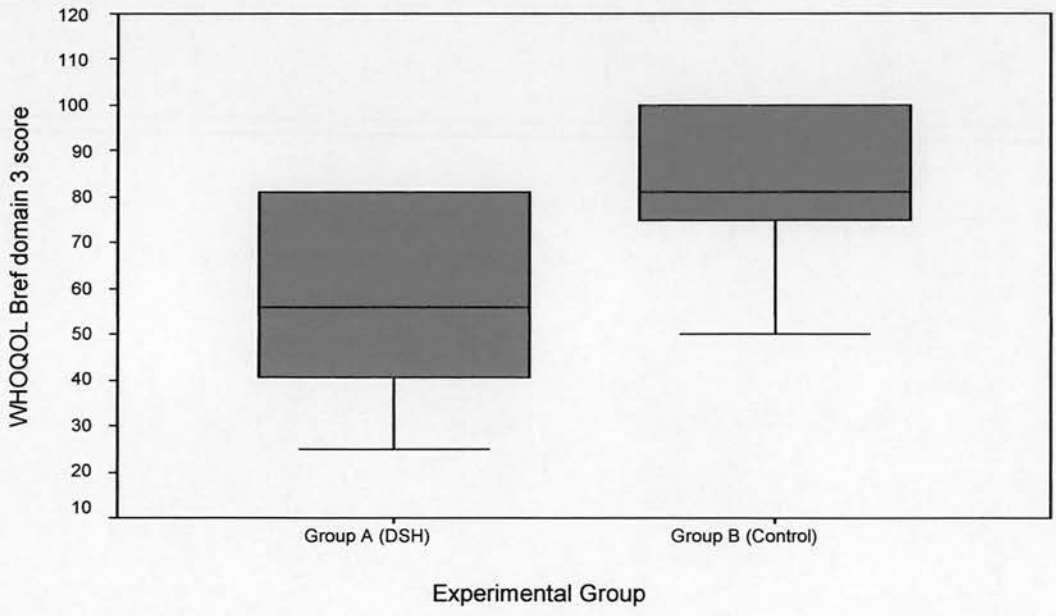


Figure 6d (above) – Boxplot of participant's Domain 3 (Social Relationships) WHOQOL Bref score, categorised by experimental group

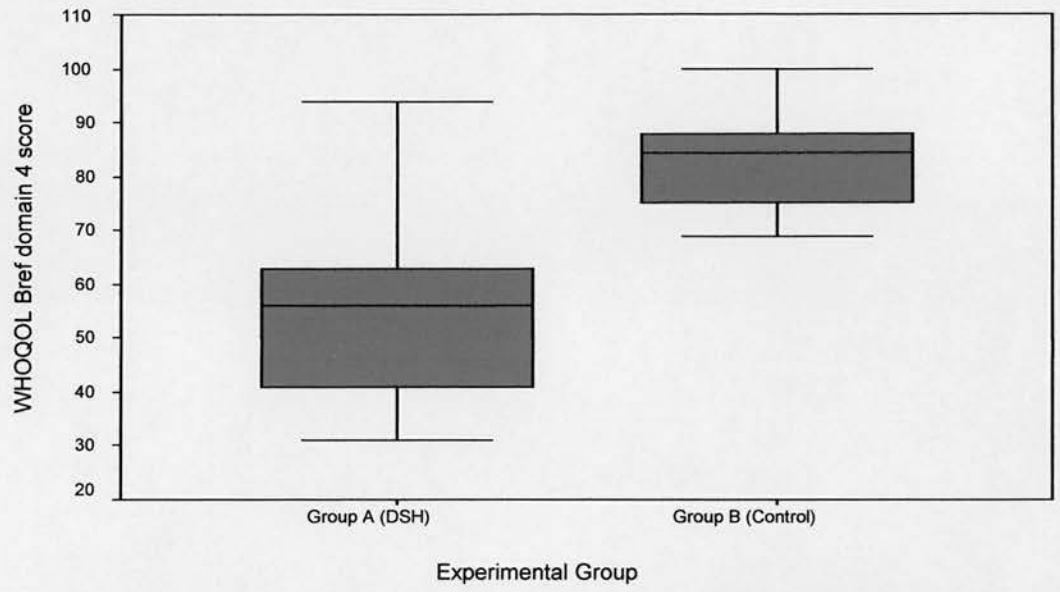


Figure 6e (above) – Boxplot of participant's Domain 4 (Environment) WHOQOL Bref score, categorised by experimental group

3.4.3 - Relationship between attachment style and perceived QOL in adolescence

Independent sample t-tests were used to explore the relationship between the variables of attachment style (as a dichotomous variable - Secure *versus* Insecure) and each of the areas of perceived QOL (Total overall perceived QOL score, Domain 1 (Physical Health) score, Domain 2 (Psychological) score, Domain 3 (Social Relationships) score, and Domain 4 (Environment) score). Exploratory data analysis in SPSS found that the skew index divided by its standard error was less than 1.96 for all conditions, thus confirming that all the data were distributed within the bounds of normality. Point biserial correlations

were employed to supplement data investigating the relationship between attachment style and perceived QOL.

Independent sample t-tests exploring the relationship between the variables of attachment style and each of the areas of perceived QOL revealed two significant relationships. Individuals with an insecure attachment style reported a significantly lower perceived quality of life in terms of their Domain 1 (Physical Health) score ($t = 3.265$, (36), $p < 0.001$), and Domain 2 (Psychological) score ($t = 4.617$, (36), $p < 0.001$). Homogeneity of variance for each of these t-tests was confirmed by Levene's Test for homogeneity of variance.

However, for the t – tests exploring the relationships between attachment style and Total overall perceived QOL score ($F = 4.934$, $p < 0.05$; $t = 4.086$ (36), $p < 0.01$); attachment style and Domain 3 (Social Relationships) score ($F = 4.376$, $p < 0.05$; $t = 2.264$ (36), $p < 0.05$); and attachment style and Domain 4 (Environment) score ($F = 4.543$, $p < 0.05$; $t = 4.016$ (36), $p < 0.01$); the Levene test for homogeneity of variance had significant F values ($p < 0.05$), indicating that the homogeneity of variance assumption had been violated. On the basis of the Levene test p-values for these t-tests, the results of t tests based on separate variance estimates (unequal variance / equal variance not assumed) were used. In these t tests, individuals with an insecure attachment style reported a significantly lower perceived quality of life in terms of their Total overall perceived QOL score ($t = 4.469$ (36), $p < 0.001$); Domain 3 (Social Relationships) score ($t =$

2.412 (35.3), $p < 0.05$); and Domain 4 (Environment) score ($t = 4.451$ (35.8), $p < 0.001$).

Point biserial correlations also confirmed the presence of a significant association between attachment style and reported level of perceived QOL in terms of Total overall perceived QOL score ($r = - 0.563$, $p < 0.001$) and Domain 1 ($r = - 0.478$, $p < 0.01$), Domain 2 ($r = - 0.610$, $p < 0.001$), Domain 3 ($r = - 0.353$, $p < 0.05$) and Domain 4 ($r = - 0.556$, $p < 0.001$) scores.

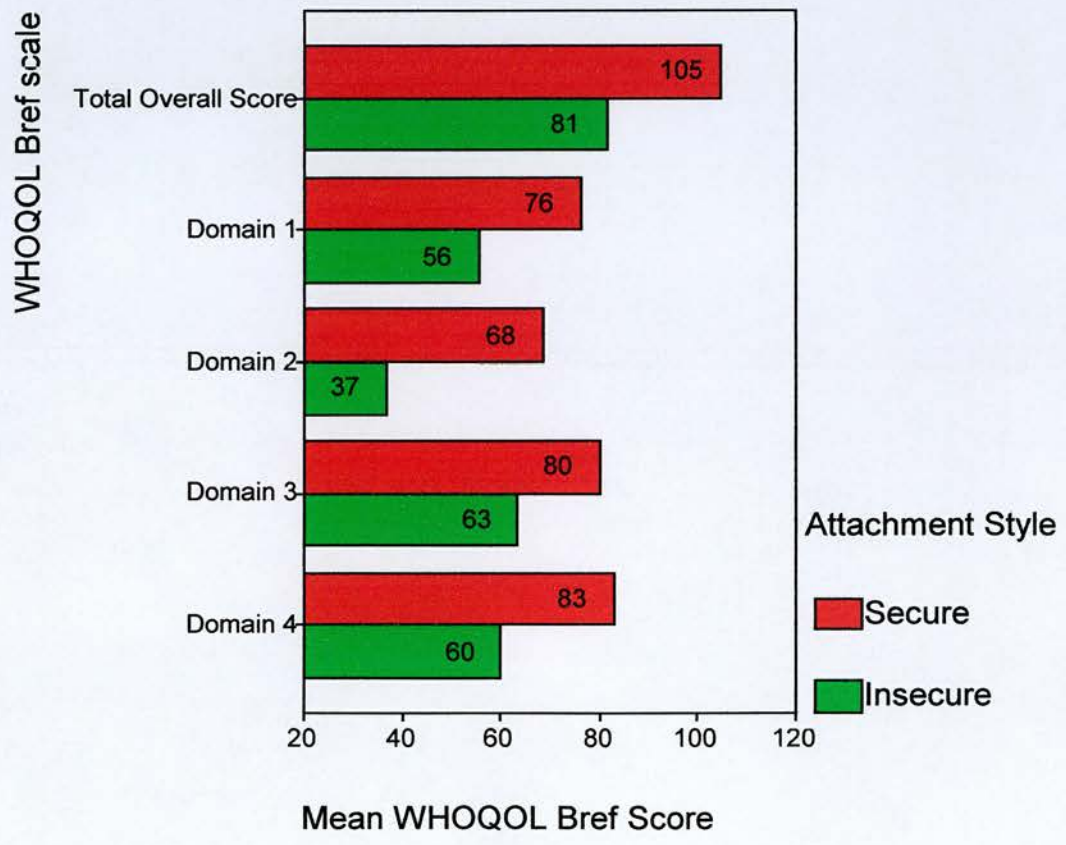


Figure 7 (above) – Mean WHOQOL Bref Score for each WHOQOL Bref scale, categorised by participant's attachment style.

This confirms the hypothesis that having an insecure attachment style is associated with a significantly lower perceived QOL in adolescence in terms of total overall score, Domain 1 (Physical Health) score, Domain 2 (Psychological) score, Domain 3 (Social Relationships) score, and Domain 4 (Environment) score. This is presented graphically in Figure 7 above.

3.4.4 - Predictive value of attachment style and perceived QOL on risk of engaging in DSH in adolescence.

Logistic regression analyses (Enter method) were carried out to determine the predictive value of "attachment style" and "perceived QOL" (independent variables) on whether or not an individual is at risk of engaging in DSH in adolescence (dependent variable) (experimental group), whilst controlling for the effects of "age", "gender", and "level of depression" (independent variables).

Inspection of correlation matrices prior to performing logistic regression analyses revealed high intercorrelations between Total overall perceived QOL score and each of the QOL Domain scores (See Appendix 14). Consequently, only the Total overall perceived QOL score was entered into the regression analyses, omitting all separate QOL domain scores. Multicollinearity was also an issue for the variable "level of depression" which was correlated highly with the variable of perceived QOL and associated with experimental group and attachment style (See Appendix 14). As a consequence of this, level of depression was entered into the regression at the end as a separate block.

To assess for the predictive value of attachment style in its own right, the independent variables of age, gender and attachment style were added in Block 1 of the logistic regression analysis; followed by the independent variable of Total overall perceived QOL being added in Block 2; and finally, the independent variable of level of depression being added in Block 3. Level of depression was treated as a dichotomous variable (None versus depressive symptoms) as a consequence of the low number of individuals in both Mild and Moderate categories as outlined previously.

The results of logistic regression analyses are presented in Figures 8a, b, and c. In all Figures, odds ratios (OR) are reported (shown as *"Exp (B)"* in SPSS output). The odds ratio is the number by which the odds of belonging to one group (probability divided by one minus the probability) are to be multiplied for each unit increase in the corresponding independent predictor variable (Wiesner and Windle, 2006). Logistic regression analyses revealed that for Block One (age, gender and attachment style entered as predictor variables), attachment style was a significant predictor of DSH in adolescence (OR = 0.031, 95% CI = 0.003 – 0.299, $p < 0.01$). Neither age (OR = 1.021, 95% CI = 0.972 – 1.073, $p > 0.05$) nor gender (OR = 0.392, 95% CI = 0.029 – 5.289, $p > 0.05$) were significant predictors of DSH (See Figure 8a, below). This model showed a moderate overall predictive value (Nagelkerke r square = 0.504) (Nagelkerke, 1991).

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I.for EXP(B) Lower	Upper
Step 1(a)	AGE	.021	.025	.702	1	.402	1.021	.972	1.073
	GENDER(1)	-.938	1.328	.498	1	.480	.392	.029	5.289
	A.STYLE2(1)	-3.466	1.153	9.034	1	.003	.031	.003	.299
	Constant	-1.841	4.921	.140	1	.708	.159		

a Variable(s) entered on step 1: AGE, GENDER, A.STYLE2.

Figure 8a (above) – SPSS output for logistic regression analyses (Block 1) (Age, Gender and Attachment style entered)

Adding the variable of Total overall perceived QOL in Block Two significantly improved the fit of the model (Chi Square = 14.836, (d.f. = 1), $p < 0.001$). Logistic regression analyses revealed that if total overall perceived QOL score was included, neither age (OR = 1.033, 95% CI = 0.967 – 1.103, $p > 0.05$), gender (OR = 0.333, 95% CI = 0.14 – 7.656, $p > 0.05$) nor attachment style (OR = 0.068, 95% CI = 0.004 – 1.235, $p > 0.05$) gave significantly better prediction of DSH. However, total overall perceived QOL was a significant predictor of DSH (OR = 0.868, 95% CI = 0.780 – 0.965, $p = 0.009$). It is noteworthy that the variable of attachment style approached significance ($p = 0.069$) (See Figure 8b, below). This model showed very good overall predictive value (Nagelkerke r square = 0.772).

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I.for EXP(B) Lower	Upper
Step 1(a)	AGE	.032	.033	.930	1	.335	1.033	.967	1.103
	GENDER(1)	-1.101	1.600	.473	1	.492	.333	.014	7.656
	A.STYLE2(1)	-2.694	1.482	3.303	1	.069	.068	.004	1.235
	QOLTOTAL	-.142	.054	6.885	1	.009	.868	.780	.965
	Constant	9.195	7.286	1.593	1	.207	9852.344		

a Variable(s) entered on step 1: QOLTOTAL.

Figure 8b (above) – SPSS output for logistic regression analyses (Block 2) (Total overall perceived QOL score entered)

Adding "level of depression" to the model in Block Three gave no significant improvement in the fit of the model (Chi-Square for addition of level of depression = 3.616, (d.f. = 1), p >0.05) (See Figure 8c, below). This is probably because depression was associated with both experimental group and all the other variables already included in the model.

The results of logistic regression analyses confirm the hypothesis that engaging in DSH in adolescence can largely be predicted from reported level of perceived QOL.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I.for EXP(B) Lower	Upper
Step 1(a)	AGE	.049	.045	1.151	1	.283	1.050	.960	1.148
	GENDER(1)	-2.698	2.584	1.090	1	.296	.067	.000	10.663
	A.STYLE2(1)	-2.854	2.035	1.967	1	.161	.058	.001	3.110
	QOLTOTAL	-.096	.062	2.383	1	.123	.909	.805	1.026
	DEPRESSI(1)	-3.124	1.961	2.539	1	.111	.044	.001	2.052
	Constant	4.722	9.111	.269	1	.604	112.367		

a Variable(s) entered on step 1: DEPRESSION.

Figure 8c (above) – SPSS output for logistic regression analyses (Block 3) (level of depression entered).

Because the current study is an exploratory study, although an inflated alpha level is acknowledged, a Bonferroni correction (statistical adjustment raising the standard of proof needed due to a number of hypotheses being examined simultaneously) was not done. A Bonferroni adjustment is likely to reduce power, especially when variables are intercorrelated, and it was desirable in the current exploratory study to retain a high power in order not to miss important relationships.

3.4.5 – Insecure attachment, perceived QOL and DSH.

An independent samples t-test comparing the total overall perceived QOL score of individuals with an insecure attachment in Group A (currently engaging in DSH) (N = 18) and the total overall perceived QOL score of individuals with an insecure

attachment in Group B (control) (N = 5), showed that the total overall perceived QOL score of individuals with an insecure attachment in Group B was significantly higher than that of individuals with an insecure attachment in Group A ($t = -4.466$, (d.f. =21), $p < 0.001$). Homogeneity of variance for this t-test was confirmed by Levene's Test for homogeneity of variance.

3.5 - Data Analysis – Within Group A.

The Deliberate Self Harm questionnaire provided a measure of whether or not an individual engages in DSH, the frequency and nature of any DSH, and potential triggers and reasons for the DSH. Individuals in Group B simply completed the first section of this questionnaire (whether or not they engaged in DSH). Individuals in Group A completed the whole questionnaire, providing information about their frequency and method of DSH, and reasons for doing it. This data was analysed descriptively and is summarised here for the reader's interest.

3.5.1 - Type and Frequency of DSH reported by participants in Group A.

In terms of the type of DSH reported by participants in the study, ten percent (10%) of participants reported taking overdoses of medication. The remaining ninety percent (90%) of individuals in Group A reported that they engaged in more than one type of DSH (both self cutting and taking an overdose of medication).

In terms of the frequency of engaging in DSH, thirty five percent (35%) of participants in Group A reported that they had engaged in DSH "a few times in the

last year"; fifteen percent (15%) reported that they engaged in DSH "at least once a month"; fifteen percent (15%) reported that they engaged in DSH "a few times each month"; and thirty five percent (35%) reported that they engaged in DSH " at least once a week".

3.5.2 - Reason for engaging in DSH (Group A), (Questions 3 – 5, Deliberate Self Harm Questionnaire).

Questions 3 and 4 in The Deliberate Self Harm Questionnaire asked participants about events (Question 3) and feelings (Question 4) which occur immediately prior to them engaging in DSH. Figure 9a (below) shows the percentage of participants responding yes or no to whether or not certain events have occurred in the period immediately before they have engaged in DSH (as indicated by their response to Deliberate Self Harm Questionnaire Question 3). Examination of Figure 9a reveals that interpersonal problems, particularly having arguments with others, were the most commonly reported event happening in the period immediately before DSH. Eighty five percent (85%) of participants reported feeling isolated or lonely before engaging in DSH. Worries about school work (55%) and worries about someone close (50%) occurred in around half of all participants. It is also of note that just over half of all respondents (55%) had worries about their own physical health.

	Statement	Yes Response	No Response
1	Had an argument or upset with someone close to you	85%	15%
2	Had argument or upset with your girlfriend/boyfriend	60%	40%
3	Had an argument or upset with your friends	65%	35%
4	Had worries about your own physical health	55%	45%
5	Had worries about the health or well being of someone close to you	50%	50%
6	You've drunk too much	30%	70%
7	You've taken street drugs	10%	90%
8	Had school work worries	55%	45%
9	You've felt very isolated or lonely	85%	15%
10	Something else, please describe	35%	65%

Figure 9a (above) - Percentage of participants in Group A responding "yes" or "no" to whether or not certain events have happened in the period immediately before they have engaged in DSH (Deliberate Self Harm Questionnaire Question 3)

Figure 9b (below) shows the percentage of participants responding whether or not statements about feelings and emotions which occur immediately prior to engaging in DSH "never", "occasionally" or "often" apply to them (as indicated by their response to Deliberate Self Harm Questionnaire Question 4). Examination of Figure 9b reveals that before injuring themselves, over half of all participants reported an irresistible urge to engage in DSH (55%). Over half of all participants reported feelings of anger / frustration (65%), sadness / depression (65%) and hopelessness (55%) prior to DSH. Sixty percent (60%) of participants reported that they occasionally felt anxious before injuring themselves.

	Statement	Never Response	Occasionally Response	Often Response
1	I have an irresistible urge to harm myself	20%	25%	55%
2	I have an increase in anxiety or panic	5%	60%	35%
3	I have an increase in anger or frustration	10%	25%	65%
4	I feel stuck and helpless	20%	45%	35%
5	I feel sad and depressed	0%	35%	65%
6	I feel hopeless about the future	15%	30%	55%
7	I feel numb or cut off from reality	10%	40%	50%
8	I feel unsupported	40%	30%	30%

Figure 9b (above) - Percentage of participants in Group A responding whether or not statements about DSH "never", "occasionally" or "often" apply to them (Deliberate Self Harm Questionnaire Question 4)

Figure 9c (below) shows the percentage of participants responding whether or not statements about the function of DSH "never", "occasionally" or "often" apply to them (as indicated by their response to Deliberate Self Harm Questionnaire Question 5). Examination of Figure 9c (below) reveals that eighty five percent (85%) of participants reported that they occasionally or often found it hard to stop engaging in DSH. Seventy five percent (75%) of participants stated that DSH occasionally or often helped them control a racing mind and made them more relaxed and less depressed. Eighty percent (80%) of participants stated that DSH occasionally or often helped them feel in control, or feel "real" again. Eight five percent (85%) of participants believed that DSH helped distract them from their feelings. Over half of all participants reported that engaging in DSH stopped them doing something worse (55%). Ninety five percent (95%) of participants commented that they never engaged in DSH to fit in with others; seventy percent

(70%) said they did not engage in DSH for someone to notice; and eighty five percent (85%) reported that they never liked the care following DSH.

	Statement	Never Response	Occasionally Response	Often Response
	When injuring myself:			
1	I'm in control of what I'm doing	10%	60%	30%
2	I find it difficult to stop	15%	45%	40%
	Self injuring:			
1	Helps me control my mind when it is racing	25%	45%	30%
2	It helps me feel relaxed	25%	35%	40%
3	It helps me feel less depressed	25%	35%	40%
4	It helps me feel real or awake again	20%	50%	30%
5	It helps me feel I am in control	20%	30%	50%
6	I get a 'buzz' from doing it	50%	30%	20%
7	It helps distract me from my feelings	15%	40%	45%
8	It stops me from doing something worse	15%	30%	55%
9	I do it so that I can fit in and belong	95%	5%	0%
10	I want someone to notice what I am doing	70%	25%	5%
11	I like being cared for after cutting/self harm	85%	15%	0%

Figure 9c (above) - Percentage of participants in Group A responding whether or not statements about DSH "never", "occasionally" or "often" apply to them (Deliberate Self Harm Questionnaire Question 5)

3.5.3 - Reason for engaging in DSH in own words (Group A), (Question 6, Deliberate Self Harm Questionnaire)

An informal qualitative approach using line by line coding was used to analyse the open question at the end of the Deliberate Self Harm Questionnaire which asked participants to state in their own words why they engaged in DSH. Twenty percent (20%) of participants left this section blank, reporting that they found it

hard to verbally express why they engaged in DSH. For the remaining eighty percent (80%) of participants, three main themes emerged across participants as reasons why they engaged in DSH. Some participants' responses fitted with more than one theme. The first theme was *"To cope with feelings".* This theme was reported by sixty percent (60%) of participants. The second theme was "*To punish self*". This theme was reported by thirty five percent (35%) of participants. The third theme was "*To feel in control*". This theme was reported by fifteen percent (15%) of participants.

DISCUSSION

This exploratory study integrates findings from three main fields of theoretical and empirical work – attachment theory, perceived QOL and DSH. The present study aimed to explore the relationship between DSH, attachment style and perceived QOL in an adolescent population. This section will explore the main findings of the study. The results are discussed and interpreted in light of the hypotheses and previous literature. This is followed by an examination of the clinical implications of the results. Finally, methodological shortcomings of the study and implications for future research are explored.

The main findings of the current study can be summarised as follows. DSH in adolescence was found to be independently associated with an insecure attachment style and a lower perceived QOL. DSH was also associated with a higher level of depressive symptoms. An insecure attachment style was associated with a lower perceived QOL. Perceived QOL was a significant predictor of risk of engaging in DSH, controlling for age, gender and attachment style. Each of these findings is considered in more detail below.

4.1 - Interpretation of results in light of hypotheses and previous literature

4.1.1 – Group Comparison

The two groups of participants in the current study were matched in terms of ethnic origin, age and gender however; participants who engaged in DSH were

significantly more likely to report the presence of depressive symptoms than participants in the control group. There was a higher prevalence of anxiety based disorders in the control group. This finding suggests that DSH in young people is associated with a higher level of depressive symptoms, and supports conclusions drawn from previous studies that DSH is strongly associated with depression (Harrington *et al*, 2006; Kerfoot *et al*, 1996; Kingsbury *et al*, 1999; Kovacs *et al*, 1993; Wallace, 2003). In the current study, young people who engaged in DSH were more likely to be rated by their therapist / clinician as having a dysfunctional family environment as compared to young people in the control group. This finding supports findings in previous literature that DSH is associated with family dysfunction and problematic relationship patterns between parents and their children (Evans *et al*, 2004; Keeley *et al,* 2003; Kerfoot *et al*, 1996; Webb, 2002).

4.1.2 – DSH and attachment style

In line with theoretical expectations, preliminary empirical evidence and hypothesis one, this study found that there was an association between engaging in DSH and having an insecure attachment style. The results of the current study support previous findings that an insecure attachment style is related to both DSH (Gratz *et al*, 2002; Kimball, 2004) and an increased likelihood of developing psychopathology (Rutter, 1995). Because attachment style has been shown to be a fairly stable attribute in individuals from early childhood to twenty five years old (Allen *et al,* 1996; Grossman & Grossman, 1991; Hamilton, 2000; Kirkpatrick & Hazen, 1994; Klohnen & Oliver, 1998; Waters *et al,* 2000), the association found

in the current study between engaging in DSH and having an insecure attachment style suggests that having an insecure attachment style may increase a young persons' vulnerability to engage in DSH during adolescence.

Because attachment style was categorised as secure and insecure to create a dichotomous variable for the purpose of statistical analyses, the current study was unable to explore the relationship between the different types of insecure attachment (fearful, preoccupied and dismissing) and DSH.

In accordance with previous literature (see sections 1.2.7 and 1.2.8), it is suggested that the association that was found between an insecure attachment style and DSH in adolescence exists because an insecure attachment style interferes with an individual's capacity for developing adaptive methods of affect regulation (Bradley, 2000). It is proposed that DSH appears to function as a self-soothing mechanism to regulate affect in young people with an insecure attachment style (Wallace, 2003). Conversely, for young people with a secure attachment style, "inner resources" promote more adaptive methods of coping, and reduce risk of self harm (Bowlby, 1969, 1973, 1980; McLewin & Muller, 2006).

Attachment theory can also provide a plausible explanation for the finding that DSH most commonly originates during adolescence. It is well documented in the literature that the developmental stage of puberty that occurs in adolescence often raises complex issues and results in young people experiencing more

overwhelming and intense emotions during this time than they have previously experienced. If, as suggested, an insecure attachment style interferes with a young person's capacity for developing adaptive methods of affect regulation; the intense emotions associated with puberty would be more likely to trigger extreme ways of regulating affect such as DSH in individuals with an insecure attachment style during adolescence.

4.1.3 - DSH and perceived QOL.

In line with theoretical expectations, preliminary empirical evidence and hypothesis two, this study found that there was an association between engaging in DSH and having a lower perceived quality of life. It was hypothesised that the relationship between engaging in DSH and having a lower perceived quality of life would be particularly the case when considering psychological elements of perceived QOL. However, a significant association was found between engaging in DSH and having a lower score on all five domains of perceived QOL (Overall perceived QOL, Physical Health, Psychological, Social Relationships and Environment). This finding is interesting because contrary to research to date that has focussed on specific elements of quality of life, such as social relationships or psychological factors, and their association with DSH; the results of this study suggest that young people who self harm are less satisfied with life in general across a wide range of areas than those who do not self harm. This finding provides support for the proposal that the concept of QOL provides an integrative framework for drawing together the multiple internal (e.g. having co-morbid mental

and physical health difficulties, or certain personal characteristics) and external (e.g. family dysfunction, problems with peers and substance misuse) characteristics that have been found to be independently associated with DSH in adolescence.

The direction of causality of the relationship between engaging in DSH and having a lower perceived QOL cannot be extrapolated from the current exploratory study and remains to be investigated. It is not clear whether a lower perceived QOL increases a young persons' vulnerability to engage in DSH, or if engaging in DSH lowers perceived QOL.

In terms of why a difference in perceived QOL might exist between self harming and non self harming adolescents; it is not clear from the results of this study whether cognitive biases operate in young people who self harm which result in them perceiving that their lives are less satisfactory; or if objective differences actually exist between the two groups. As outlined in the introduction (see section 1.3.4), the results of recent studies in the area of health related QOL suggest that, in terms of physical health, subjective differences in perceived QOL are often not supported by objective medical measures, suggestive of differences in cognitive appraisal between individuals (Ciechanowski *et al,* 2002; Rabung *et al*, 2004; Waldinger *et al,* 2006).

4.1.4 - Attachment style and perceived QOL.

In line with hypothesis three, the current study found an association between having an insecure attachment style and having a lower perceived QOL. Individuals with an insecure attachment style had a significantly lower perceived QOL on all five domains of perceived QOL (Overall perceived QOL, Physical Health, Psychological, Social Relationships and Environment).

Although significant, the difference found between those with a secure attachment style and those with an insecure attachment style in terms of Domain 3 (Social Relationships) score was not as strong as the relationships found between attachment style and the other QOL domains. This finding is contrary to what might be expected given that attachment style is a property of social relationships. However, it is likely that the relative importance assigned to social relationships differs depending on an individuals' attachment style, and the questions in the WHOQOL Bref were not specific or sensitive enough to tap into these differences. For example, for the WHOQOL Bref question - "How satisfied are you with your personal relationships?" - someone with a secure attachment style may have numerous good relationships and therefore rate the quality of their social relationships as 5 (very good). However, someone with an insecure attachment style may also rate the quality of their social relationships as 5 (very good), despite having very few good relationships, because in terms of interpersonal relationships, this is the level of social intimacy that individuals with an insecure attachment style want and are comfortable with. Future research could address

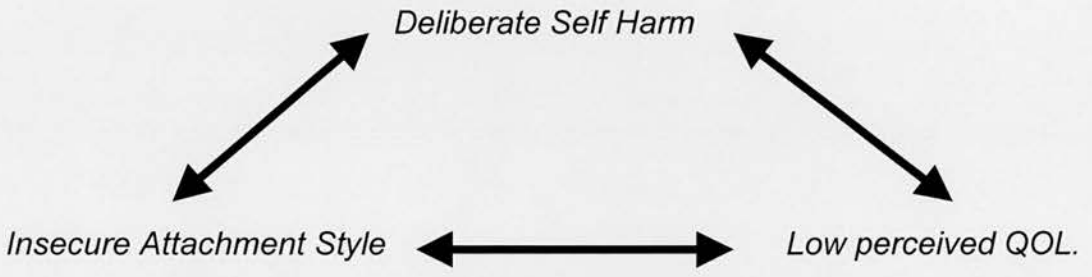
this by using more sensitive or specific measures that tap into the relative importance of different aspects of perceived QOL, such as social relationships, to individuals.

The results of the current study support previous findings that an insecure attachment style is associated with a lower perceived QOL (Ciechanowski *et al,* 2002; Rabung *et al*, 2004; Waldinger *et al,* 2006). The association found between having an insecure attachment style and a lower perceived QOL suggests that an insecure attachment style may in some way mediate a young persons' perceived QOL. It is possible, as outlined in the introduction (see section 1.3.4), that having the traits that are associated with an insecure attachment style, such as a negative view of self and / or others, may hamper how an individual functions in various areas of their life, resulting in less satisfaction for the individual in these life areas. A reduced satisfaction in certain life areas would result in a reduction in overall subjective QOL. Again, it is not clear from the results of this study whether cognitive biases operate in young people with an insecure attachment style that result in them perceiving that their lives are less satisfactory; or if objective differences actually exist.

4.1.5 - DSH, attachment style and perceived QOL.

Figure 10 (below) shows the independent relationships found in this study between DSH, attachment style and perceived QOL. In line with hypothesis four,

it appears from visual examination of Figure 10 that the three variables appear to interact with each other and be mutually influential.



(Arrows denote an association between variables and not necessarily the direction of the relationship)

Figure 10 (above) – Independent relationships found in the current study between attachment style, perceived QOL and DSH in adolescence.

Although the exact nature and direction of cause and effect between the three variables cannot be established from the results of this exploratory study, it is suggested that there are various possible reasons why the concepts of attachment style, perceived QOL and engaging in DSH may interact and influence each other. Perhaps the most plausible of these is that, in line with tentative conclusions drawn from previous theoretical and empirical evidence, as noted above, having an insecure attachment style increases the likelihood that individuals will have maladaptive affect regulation strategies and dysfunctional coping mechanisms (see sections 1.2.7 and 1.2.8). Empirical evidence suggests that this leads to an increased vulnerability of developing psychopathology. It is suggested that by the same mechanism this also directly increases an individuals'

vulnerability to engaging in DSH. Furthermore, an insecure attachment style functions to reduce an individual's perceived level of quality of life by hampering how an individual functions in certain areas of life (see section 1.3.4). Perceived QOL then acts as an additional mediating factor which further influences an individual's likelihood of engaging in DSH. A high perceived QOL increases resilience and functions as a protective factor against DSH. A low perceived QOL increases vulnerability to engage in DSH.

The results of logistic regression analyses from this study support the above idea. With age, gender and attachment style entered as predictor variables, logistic regression analyses revealed that attachment style was a significant predictor of risk of engaging in DSH. This supports the proposal that attachment style independently influences vulnerability of engaging in DSH. However, adding the variable of total overall perceived QOL significantly improved the fit of the model. If total overall perceived QOL score was included, neither age, gender nor attachment style gave significantly better prediction of DSH. It is interesting that when total overall perceived QOL was a significant predictor of risk of engaging in DSH, the variable of attachment style approached but failed to reach significance. This finding supports the proposal that although attachment style is associated with DSH, perceived QOL functions as a mediating factor and is therefore a better predictor of DSH than attachment style alone.

Unfortunately, the results of the current study are complicated by the variable level of depression. The two groups of participants in the study were matched in terms of demographic variables but participants in Group A were significantly more likely to report the presence of depressive symptoms than participants in Group B. As noted above, this finding is likely to be reflective of the strong association found between DSH and depression in previous research (Harrington *et al*, 2006; Kerfoot *et al*, 1996; Kingsbury *et al*, 1999; Kovacs *et al,* 1993; Wallace, 2003). However, depression was also highly correlated with all the domains of perceived QOL and associated with attachment style. When variables in a regression model are highly correlated with each other this results in overlap in the variance that they account for in the dependant variable; and the relative contribution of independent variables is likely to be overestimated. The results of logistic regression are likely to follow from this correlation structure. Multicollinearity may have been the reason why adding level of depression as a predictor variable in logistic regression analyses did not improve the fit of the model. Unfortunately, the present study cannot separate out the variance found between groups that may have been due to group differences in terms of DSH, from that which may have been due to group differences in terms of depressive symptoms. This issue could be addressed in future research by having two control groups, one with individuals with no mental health difficulties, and one with individuals with depression but no past or current history of DSH.

Nonetheless, it is possible to conceptualise the risk of engaging in DSH in adolescence from the results of this study taking into account the factors of attachment style and perceived QOL, whilst also considering level of depression. Figure 11 (below) proposes an integrative model of the results of the current study. The model in Figure 11 shows that in the current sample, the variable of attachment style independently results in an individual being more or less likely to engage in DSH. An insecure attachment style increases the risk of engaging in DSH. A secure attachment style decreases the risk of engaging in DSH. Figure 11 proposes that the variables of perceived QOL and level of depression then function as mediating factors as to whether or not an individual is at a further increased likelihood of DSH. A low level of perceived QOL and a high level of depression increase vulnerability of engaging in DSH. Thus, although an individual with a secure attachment style does not have an inherent increased likelihood to engage in DSH, if they have a very low perceived QOL and a high level of depression, this then mediates their risk of engaging in DSH and increases the likelihood that they will self harm. Conversely, although an individual with an insecure attachment style may have an inherent vulnerability to engage in DSH, if they have a very positive perceived QOL and a low level of depression, this then mediates their risk of DSH and reduces the likelihood that they will self harm. The results of this study validate the model in Figure 11.

The finding that the total overall perceived QOL score of individuals with an insecure attachment style in Group B (non self harmers) was significantly higher

than that of individuals with an insecure attachment style in Group A (self harmers) is of particular interest as it provides further backing to the model outlined in Figure 11. This finding suggests that, although individuals in both groups in this comparison had an insecure attachment style, and thus an inherent vulnerability to DSH, their respective levels of perceived QOL mediated their risk of engaging in DSH.

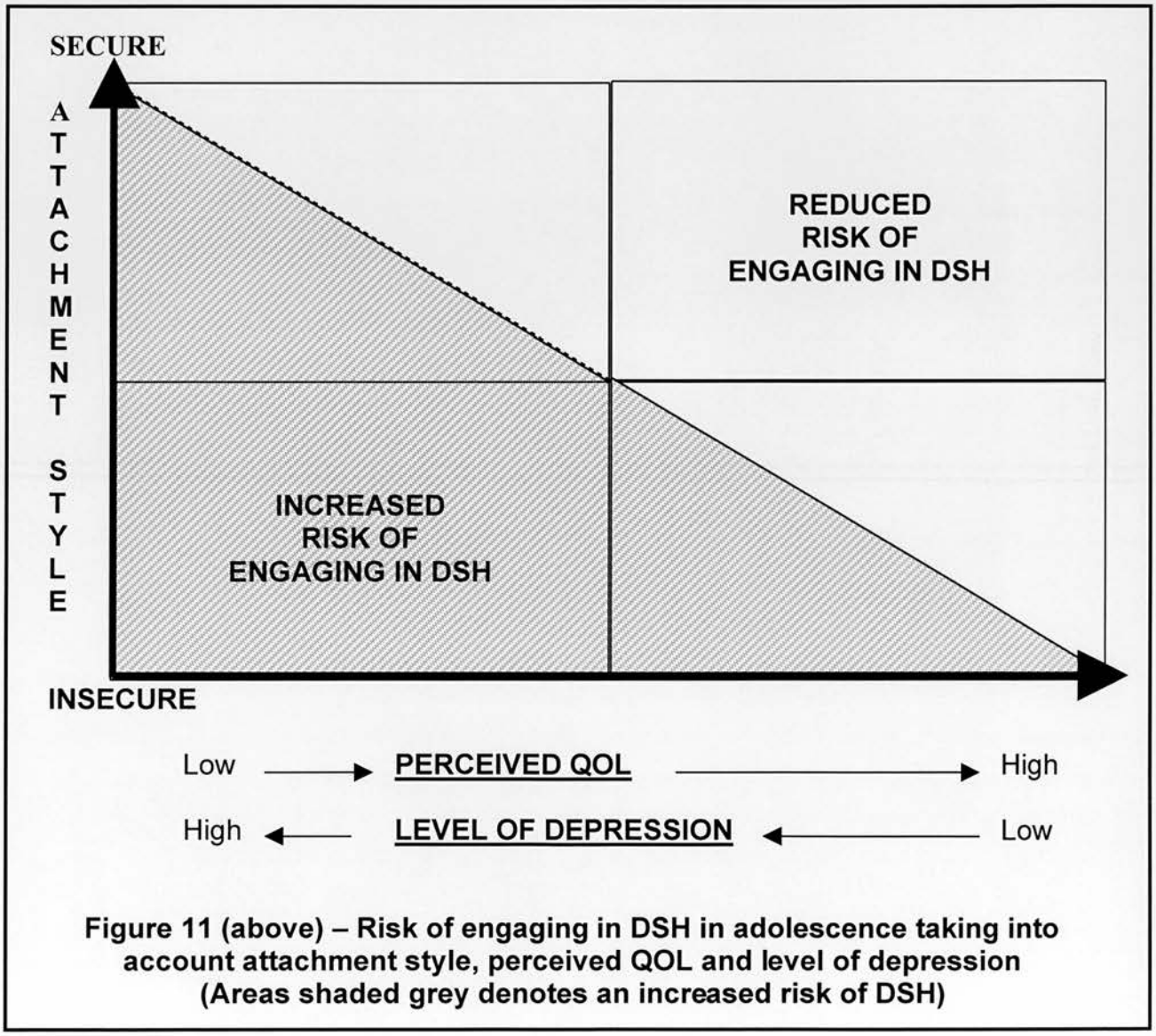


Figure 11 (above) – Risk of engaging in DSH in adolescence taking into account attachment style, perceived QOL and level of depression (Areas shaded grey denotes an increased risk of DSH)

4.2 - Nature of DSH in the current study.

The majority of individuals in this study who reported engaging in DSH engaged in more than one type of self harm. Ninety percent of those that self harmed reported that they took overdoses of medication as well as cutting themselves. Studies to date have often been criticised for failing to state the exact nature of DSH that their participants engage in, however, given the high proportion of mixed self harm in the current study, it is suggested that categorising individuals by the exact type of self harm they engage in may not always be possible. In terms of frequency of self harm, sixty five percent of the current sample engaged in DSH at least once a month or more frequently. The high reported frequency of DSH in the current sample emphasises the scale of the problem in adolescence.

The reported events precipitating DSH, the feelings and emotions linked with self harm and the reasons for engaging in self harm given by the sample in the current study appear to mirror and therefore support those found in previous literature. In terms of incidents occurring immediately prior to an episode of DSH, the sample in the current study reported precipitating events similar to those which have been reported in previous studies such as interpersonal disputes, feeling isolated / alone and worrying about school work (Fox and Hawton, 2004).

An interesting finding in the current study was the fact that just over half of all respondents who engaged in DSH reported that they were worried about their own physical health. With the exception of the physical harm that they inflict upon

themselves and the potentially negative consequences that this may have on physical health; there does not appear to be any reason why young people who self harm should be more worried about their physical health than those in the control group. Individual's who engaged in DSH had a significantly lower average WHOQOL Bref Domain 1 (Physical Health) score compared with those that did not self harm. This suggests that there were definite differences in the perceived physical health of the two groups in the current study. This may be worthy of further research attention.

Common feelings associated with DSH in the current sample also reflected and supported those reported in the literature. Reported feelings included anger and frustration, sadness / depression, anxiety and hopelessness. In terms of the function that DSH served, the current sample also reported functions matching those found in previous literature (Fox and Hawton, 2004), including DSH being a method to help cope with difficult feelings; a way of punishing one's self, and a way to feel in control again. These reported functions support the proposal that DSH serves as a maladaptive method of affect regulation (see section 1.2.8).

The majority of young people in this study reported that they engaged in DSH alone, did not self harm for someone to notice and did not like aftercare following an episode of DSH. This dispels the common myth that DSH is an attention seeking behaviour and supports conclusions from previous studies that DSH in

young people is generally a secretive behaviour (Mental Health Foundation, 2006).

4.3 - What this study adds to current literature

This exploratory study contributes to the growing body of research that suggests that an insecure attachment style is associated with the development of psychopathology in adolescence. The current study provides preliminary evidence that engaging in DSH is related to an insecure attachment style. The results of this study support conclusions drawn from previous research that DSH is strongly associated with depression. Furthermore, this study introduces the integrative framework of perceived QOL as being a useful way of understanding DSH in adolescence, and provides evidence that DSH in young people is associated with a lower perceived QOL. The characteristics of the sample of self harming adolescents in the present study support the findings of previous studies about the nature, frequency, and function of DSH in this population.

Although the current study has a relatively small sample size, it has a number of strengths compared to other studies done in this topic area. Primarily, the current study employs a clinical population, giving it advantage over studies that have used undergraduate student populations. Additionally, the current study utilised a control group.

4.4 - Clinical Implications of Findings

The results of this study have several clinical implications. The finding that an insecure attachment style, a low perceived QOL and a high level of depression are related to DSH in young people is of direct clinical relevance because this should be recognised in terms of preventing, assessing, understanding and managing DSH in this population.

As outlined in the introduction section, prevention of DSH in young people and education of professionals in contact with this group have been identified as key areas to managing DSH in adolescence. In terms of preventing DSH, as more and more of the antecedents of DSH in young people are identified, these can be used for identifying individuals at risk and targeting these groups and professionals involved with them with psycho-education about DSH, informing them about sources of help and providing extra support where needed. Teaching, training, close liaison and consultancy within schools would provide access to the target population.

In direct clinical work, the impact of attachment style, perceived QOL and depressive symptoms on a young persons' self harming behaviour should be taken into account during assessment and formulation to develop a more comprehensive and holistic understanding of their current presentation. A holistic view of a young person's difficulties highlights the most appropriate intervention avenues. DSH has often been conceptualised as the behavioural outcome of

underlying emotional difficulties (Mental Health Foundation, 2006) and therefore reduction of emotional symptoms such as depression could become a primary target in intervention.

Nakash-Eisikovits *et al* (2002) question how the finding that there is a relationship between attachment and psychopathology can be used practically in clinical work, particularly when attachment style has become solidly constructed over the years. However, both Bowlby (1969, 1973, 1980) and Ainsworth (1989) emphasised the importance of the experiences of relationships beyond infancy on attachment style. In terms of intervention, Crittenden (1997) suggests that the therapeutic relationship can be used in order for the client to begin to re-address their models of self and models of other, creating a therapeutic secure base for working and addressing their difficulties from. Additionally, increasing health care professionals' awareness of attachment theory, and training them regarding specific attachment styles and how an individual's attachment style influences their corresponding pattern of relating to others may improve empathy and reduce frustration in many difficult patient-provider relationships, thus leading to better outcomes (Ciechanowski *et al*, 2002).

The finding that perceived QOL is a significant predictor of DSH in adolescence also has clinical management implications. Huebner *et al* (2004) question whether perceived QOL is sufficiently malleable for interventions to affect it. Although it is acknowledged that perceived QOL is essentially of a subjective

nature; if there are differences in the way that individuals who engage in DSH or individuals with an insecure attachment style cognitively appraise situations, there may be scope to improve perceived QOL using cognitive techniques. Objective differences in QOL may be more appropriately dealt with by referral onto other agencies such as social work agencies or physicians to deal with social, environmental and physical concerns.

4.5 - Methodological Constraints

The current study has a number of methodological constraints and therefore conclusions drawn from it must be tempered accordingly. Primarily, it is acknowledged that there are inherent complications in examining the relationship between DSH and attachment or perceived quality of life because of numerous potential confounding variables. Thus, at best, the results of this study can only imply that there appears to be an association between engaging in DSH and having (a) an insecure attachment style; (b) a low perceived quality of life; and (c) a high level of depression; whilst actively acknowledging that there is a myriad of factors which contribute to the complex reasons why young people deliberately harm themselves. Furthermore, it is acknowledged that associations between variables in a cross sectional study cannot technically be interpreted as necessarily indicating risk factors (Hawton *et al*, 2002). Because of the interaction of multiple factors, research designs based on linear main effects may not be adequate to investigate risk factors for topics such as engaging in DSH in adolescence (McLewin and Muller, 2006).

As noted in the results, because the current study is an exploratory study, although an inflated alpha level is acknowledged, a Bonferroni correction (statistical adjustment raising the standard of proof needed due to a number of hypotheses being examined simultaneously) was not done. A Bonferroni adjustment is likely to reduce power, especially when variables are intercorrelated, and it was desirable in the current exploratory study to retain a high power in order not to miss important relationships. Other methodological difficulties with the study can be categorised in terms of participants, measures and other issues. Each of these will be dealt with in turn.

4.5.1 - Participants

There are a number of potential issues with the sample used in the current study. Recruitment of participants proved to be problematic, largely due to the time constraints of the present study. This resulted in a sample size that was smaller than had been anticipated. A small sample size increases sampling error and reduces statistical power. In terms of the statistical tests used in this study, Cohen (1992) suggests that to detect large effect sizes at power = 0.80 for alpha = 0.05 for independent sample t – tests and Chi Square statistical tests (1d.f.), a sample size of 26 is required. To detect a large effect size at power = 0.80 for alpha = 0.05, for logistic regression with two independent variables, a sample size of 30 is suggested (Cohen, 1992). Unfortunately the sample size in the current study fell short of these estimated sample size numbers. As a consequence of this it could be argued that either the significant results obtained are an artefact of

sampling error; or that potentially significant results were obscured. Post hoc statistical power was not calculated on the basis of recent debate amongst statisticians that retrospective power calculations are fundamentally flawed and essentially meaningless, given that observed power is actually a function of the observed effect size and hence the observed p value, meaning that statistically significant results will generally produce high observed power (Baguley, 2004).

There are several potential reasons for the difficulties that occurred recruiting participants. Problems recruiting young people may be in part due to some young people's low level of motivation to attend a mental health clinic. On the basis of clinical experience with an adolescent population, there is often parental pressure for young people to attend the clinic against the young person's wishes. Parental pressure to attend is usually due to parental concerns regarding the young person's current presentation outweighing the concerns of the young person themselves. A lack of concern as regards their own difficulties may have reduced the likelihood that young people would agree to participate in the study. Unfortunately, the timing of recruitment of participants coincided with the time of both Standard Grade and Higher examinations at schools within the Grampian region. Exams are of obvious and understandable importance to young people and the need to study for these may have reduced the number of young people willing to take part. Recruitment also took place during early summer, when spending time out in the sunshine is likely to have been more infinitely attractive to adolescents than spending forty minutes indoors completing questionnaires.

As well as issues around sample size, the sample used in this study may be seen as being unrepresentative in a number of ways. The current study used an out patient based sample. As noted previously, a large proportion of young people who engage in DSH never present to mental health services (Hawton *et al*, 2002; Conterio & Lader, 1998). Results would need to be replicated in a community based sample. There was also no representation of different ethnic groups in the current sample.

A further criticism with the population used in the current study is that of sample bias. A large number of young people refused to be included in the study and there may well be differences between the group who agreed to participate and the group who did not which are inherent in contributing to understanding and explaining the findings of the current study. A recruitment bias may be particularly important when considering those that opted in to the DSH group. As noted above, for a number of young people who engage in DSH, this is a secretive behaviour that they choose not to discuss (Mental Health Foundation, 2006). If the individuals that choose not to discuss their DSH formed the majority of those that chose not to take part, there may be important differences between this sub-population of adolescents who engage in DSH and those that chose to take part, that were not picked up by the current study. It should also be noted that the sample used in this study was a treatment seeking group.

As well as differing in terms of self reported depressive symptoms, the two groups differed slightly in terms of primary mental health diagnoses; with depression and family dysfunction being more prevalent in Group A and anxiety and OCD being more prevalent in Group B. These differences may have contributed to the results found. Future research should have groups that are matched in terms of primary mental health diagnosis.

4.5.2 - Measures

In terms of the measures used in the present study, there are four main points to be made. Primarily, this study relied on the use of subjective self-report measures. Self-report measures lack objectivity which may be a particular problem in an adolescent population where it is common for young people's feelings about themselves and their environment to fluctuate wildly on a day to day basis, with variation highly dependent on external sources such as family relationships or peer group influence. Future research may wish to incorporate alternative objective methods of variable measurement alongside self report, such as interviews, clinician report or observation.

Secondly, given the relative lack of psychometrically validated instruments to assess the concept of attachment style in an adolescent population, it must be noted that the RSQ / RQ may not be an ideal measure of attachment style in this group. However, given the high correlations found between each young person's

score on the RQ and their score on the RSQ it is argued that these were valid measures.

Thirdly, the separate variables of attachment style and level of depression were originally scored as nominal variables with each having four categories of membership ('secure', 'insecure-fearful', 'insecure-preoccupied' and 'insecure-dismissing' for the attachment style variable and 'none', 'mild', 'moderate' and 'severe' for the level of depression variable). However, for both variables, due to the low number of participants in two of the four categories of membership, for the purpose of statistical analyses, three former categories were collapsed into one to create a dichotomous variable in both instances ('secure' and 'insecure' for the attachment style variable) ('none' and 'depressive symptoms' for the level of depression variable). As outlined in the introduction (see Section 1.2.6), it is acknowledged that collapsing three categories into one has a number of negative implications and left a wide degree of variability within one of the categories, and this may have contributed to the results found. On the other hand, it is argued that finding significant relationships between data that has essentially been diluted is indicative that even stronger relationships may have been present if a larger sample size had allowed more reliable statistical comparison between variables using the original four category membership.

Finally, it should be mentioned that in order to obtain a total score on the WHOQOL Bref, all domain scores are accorded with the same importance and combined. This may result in a loss of sensitivity.

4.5.3 - Other issues

The present study did not control for the method of self-injury of participants in Group A. This may be important because as noted earlier, available literature has suggested that the characteristics of young people who cut themselves may differ from those of young people who take overdoses (Rodham *et al*, 2004). Additionally, bearing in mind that all participants currently attended mental health services, the stage of treatment that an individual was at was not controlled for. This may have had an influence on the results. It should be noted, however, that regardless of statistical significance, the results have clear clinical significance.

4.6 - Future Research Directions

Throughout the discussion section above suggestions have been made as regards future research directions. These are summarised below. Because the current study was exploratory in nature, it should be replicated with adaptations that take into account (and where possible resolve) the methodological constraints outlined above. In particular, a larger sample size should be used. Although it may appear an ambitious idea, a study with four groups would be ideal (one community based group with individuals aged between 13 – 18 years with no mental health difficulties (control A); a second group with individuals aged

between 13 – 18 years with mixed mental health difficulties but no past or current history of DSH (control B); a third group with individuals aged between 13 – 18 years with depression but no past or current history of DSH (control C), and a fourth group with individuals aged between 13 – 18 years who currently engage in DSH). This would allow examination of the influence of a number of potentially confounding variables.

In terms of measures, it would be beneficial to assess attachment style with the Adult Attachment Interview (AAI) (George *et al*, 1985; Main & Goldwyn, 1994) in future research, as although administration of the AAI requires training and is more time consuming, this measure has stronger psychometric properties than the measures used in the current study. It would also be beneficial to assess QOL in more depth, perhaps by using the WHOQOL-100 (The WHOQOL group, 1998). The WHOQOL Bref used in the current study is a condensed version of the WHOQOL-100, and the WHOQOL-100 itself would provide a more comprehensive and exhaustive measure of perceived QOL. More in-depth assessment of perceived QOL would provide more conclusive evidence as to the usefulness of the concept of perceived QOL as an integrative framework in which to understand and draw together the multiple external and internal influences associated with DSH in adolescence.

It is unclear from the results of the present study whether individuals who (a) engage in DSH, or (b) have an insecure attachment style, have a lower perceived

QOL as a result of differences in the way that they cognitively appraise situations, or if objective differences actually exist for these individuals. This issue has a direct impact on possible intervention strategies and could be addressed in future research by using both subjective and objective measures of QOL and comparing the two measures.

Future research could take forward the proposal that DSH in adolescence appears to function as a self soothing mechanism for those with an insecure attachment style (Wallace, 2003) by attempting to incorporate some kind of measure of affect regulation into study designs to empirically validate this proposal. Finally, it is desirable that the theoretical model proposed in Figure 11 in the current study (see section 4.1.5) outlining the risk factors of engaging in DSH in adolescence is subject to more rigorous empirical validation.

CONCLUSIONS

The aim of this exploratory study was to investigate whether the theoretical frameworks of attachment and perceived QOL were useful for understanding DSH in adolescence, by exploring the relationship between DSH, attachment style and perceived QOL in this population. DSH was found to be independently associated with an insecure attachment style and a lower perceived QOL. DSH was also associated with a higher level of depression. Perceived QOL was found to be a significant predictor of risk of engaging in DSH, controlling for age, gender and attachment style. A model of the risk factors for engaging in DSH in adolescence was proposed based on the results found in the current study. The results of this exploratory study provide preliminary evidence that an insecure attachment style appears to increase the risk of engaging in DSH in adolescence. This risk appears to be mediated by a young person's perceived QOL and level of depressive symptoms; with adolescents' with a lower perceived QOL and high depressive symptoms being at greater risk of DSH. Methodological constraints of the current study and future research directions were discussed.

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APPENDICES

Appendix 1
Participant Invitation Letter

NHS Grampian

Young People's Department
Lower Garden Villa
Royal Cornhill Hospital
Cornhill Road
Aberdeen
AB25 2ZH

Telephone (01224) 557268

Dear

I would like to invite you to consider taking part in a research study currently being undertaken at the Young People's Department / Rowan Centre to try to find out more about the reasons why some young people deliberately harm themselves.

Before you decide if you want to take part in the research, it is important to understand why the research is being done, and what it will involve for you. I have enclosed an information sheet about the research study and a consent form. Please read this information sheet carefully. Talk about it with your family and friends if you want to. If you have any questions about the research, please do not hesitate to contact the **principle investigator, Ms Rachael Smith. Ms Smith** can be contacted by telephone on (01224) 557268 or by e-mail on rachael.smith@nhs.net.

Please take time to decide whether or not you wish to take part. This is entirely up to you and deciding not to take part in the research will have no effect on your appointments at the Young People's Department or the Rowan Centre.

If you are happy to take part in the research study, please inform **me** at your next appointment at either the Young People's Department or the Rowan Centre. I will then arrange for the researcher to contact you.

Many thanks for considering taking part.

Yours Sincerely,

(Insert name of therapist currently seeing young person)
(Insert Discipline)
Young People's Department / Rowan Centre

Appendix 2a
Participant Information Sheet (Group A)

Young People's Department
Lower Garden Villa
Royal Cornhill Hospital
Cornhill Road
Aberdeen
AB25 2ZH
Tel: 01224 557268

NHS Grampian

INFORMATION SHEET FOR PARTICIPANTS

Study Title: Deliberate Self Harm in Young People.

Invitation to take part in a research project

You are being invited to take part in a research project to try to find out more about the reasons why some young people deliberately harm themselves. Before you decide if you want to take part in the research, it is important to understand why the research is being done, and what it will involve for you. Please read this information sheet carefully. Talk about it with your family, friends or doctor if you want to. Please take time to decide whether or not you wish to take part.

Thank-you for reading this.

Why are we doing this research? Why is it important?

It is estimated that as many as 1 in every 7 young people aged 12 - 18 may deliberately harm themselves. Different types of deliberate self harm include cutting, scratching, hitting or burning ones own skin, or taking an overdose of drugs or alcohol. At the moment very little is known about the reasons why some young people harm themselves in these ways. By comparing young people who do self harm with young people who do not self harm we hope to find out some of the differences between the two groups. We hope that finding out more about the reasons why some young people self harm will lead to better help being available for these young people, and their families.

What exactly is the research trying to find out?

The research aims to investigate whether self harm in young people is related to:

1. How happy the young person is about different things in their life like school and money (known as their *"perceived quality of life"*).
2. The young person's view of their own relationships with others for example how much they can trust or depend on other people (known as *"attachment style")*

Who is doing the research?

The research is being carried out by Ms Rachael Smith, Trainee Clinical Psychologist at the Young People's Department, as part of her qualification of Doctorate in Clinical Psychology at the University of Edinburgh. Dr Lynne Taylor, chartered Clinical

Psychologist at the Young People's Department in Aberdeen and Dr Sean Harper, Clinical Psychologist in NHS Lothian and Academic at the University of Edinburgh will oversee the research.

Why have I been asked to take part?

You have been asked to take part because you are currently a young person. You were chosen as a potential participant for this research because you currently attend either the Young People's Department or the Rowan Centre. Around 100 other young people will be involved in this study.

Do I have to take part?

It is completely up to you whether or not you choose to take part. You can also stop taking part at any time without giving a reason. You will not be affected in any way if you decide not to take part.

What will happen to me if I do take part?

The research will take place between February 2006 and August 2006. You will be asked to complete four separate questionnaires. These questionnaires should take no longer than 30 - 45 minutes in total to complete. The researcher will offer you a set appointment time with them at the Young People's Department or the Rowan Centre to complete the questionnaires. This appointment time will be separate from any other appointments you have at the Young People's Department or the Rowan Centre. One of these questionnaires asks about deliberate self harm. The second questionnaire asks about how satisfied you are about different areas in your life such as friendships, money and school or work. The third questionnaire asks about your feelings about relationships with different people. The fourth questionnaire asks about your current mood and emotions.

Will my taking part in this research project be kept confidential? Who will see what I put in the questionnaires?

The health care professional that you see at the Young People's Department or the Rowan Centre will be informed that you are taking part in the study. You must also consent to your GP being informed that you are participating in the study. The information that you give in your answers in the questionnaire will remain completely confidential. No-one but the researchers will see this. ***However, if you admit that you do currently self harm, or the questionnaires that you or your parents complete indicate that you may have other mental health difficulties, and you are NOT currently receiving help / advice from a health care professional regarding this, your GP will be informed so that he or she can arrange for you to get access to help if you want it.***

What are the possible benefits of taking part?

There are no individual benefits for taking part in the study, however, the information that we get might help young people who self harm in the future.

Who has reviewed the study?

Before any research goes ahead, it has to be checked by an Ethics Committee. They make sure that the research is ok to do. This study has been checked by the Grampian Ethics Committee.

What if something goes wrong?

One of the questionnaires you will be asked to complete asks about deliberate self harm and some people might find this upsetting. If completing the questionnaires raises important issues that you feel that you need help with, we can help put you in touch with appropriate sources of help. If you are unhappy about what happens, you can make a complaint by following the normal NHS complaints procedure.

What will happen to the results of the research study?

The study will be written up as part of Rachael Smith's Doctorate in Clinical Psychology at the University of Edinburgh, and submitted for publication in a Psychology journal. You can be sent a summary of the results if you wish.

I want to know more? Contact details.

Please feel free to contact the researchers who will be happy to answer any other questions you may have.

Ms Rachael Smith (Principle Researcher)
Trainee Clinical Psychologist
The Young People's Department,
Lower Garden Villa,
Royal Cornhill Hospital,
Aberdeen,
AB25 2ZH.

Telephone: (01224) 557268
E-mail: rachael.smith@nhs.net .

Dr Lynne Taylor
Chartered Clinical Psychologist
The Young People's Department,
Lower Garden Villa,
Royal Cornhill Hospital,
Aberdeen,
AB25 2ZH

Telephone: (01224) 557268
E.mail: Lynne.Taylor@gpct.grampian.scot.nhs.uk

This information sheet is yours to keep. If you agree to take part you will be required to sign a consent form which you will also be given a copy of.

Thank-you for taking the time to read this and considering taking part.

Appendix 2b
Participant Information Sheet (Group B)

Young People's Department
Lower Garden Villa
Royal Cornhill Hospital
Cornhill Road
Aberdeen
AB25 2ZH
Tel: 01224 557268

NHS Grampian

INFORMATION SHEET FOR PARTICIPANTS

Study Title: Deliberate Self Harm in Young People.

Invitation to take part in a research project

You are being invited to take part in a research project to try to find out more about the reasons why some young people deliberately harm themselves. Before you decide if you want to take part in the research, it is important to understand why the research is being done, and what it will involve for you. Please read this information sheet carefully. Talk about it with your family, friends or doctor if you want to. Please take time to decide whether or not you wish to take part.

Thank-you for reading this.

Why are we doing this research? Why is it important?

It is estimated that as many as 1 in every 7 young people aged 12 - 18 may deliberately harm themselves. Different types of deliberate self harm include cutting, scratching, hitting or burning ones own skin, or taking an overdose of drugs or alcohol. At the moment very little is known about the reasons why some young people harm themselves in these ways. By comparing young people who do self harm with young people who do not self harm we hope to find out some of the differences between the two groups. We hope that finding out more about the reasons why some young people self harm will lead to better help being available for these young people, and their families.

What exactly is the research trying to find out?

The research aims to investigate whether self harm in young people is related to:

1. How happy the young person is about different things in their life like school and money (known as their *"perceived quality of life"*).
2. The young person's view of their own relationships with others for example how much they can trust or depend on other people (known as *"attachment style")*

Who is doing the research?

The research is being carried out by Ms Rachael Smith, Trainee Clinical Psychologist at the Young People's Department, as part of her qualification of Doctorate in Clinical Psychology at the University of Edinburgh. Dr Lynne Taylor, chartered Clinical

Psychologist at the Young People's Department in Aberdeen and Dr Sean Harper, Clinical Psychologist in NHS Lothian and Academic at the University of Edinburgh will oversee the research.

Why have I been asked to take part?

You have been asked to take part because you are currently a young person. **You may or may not self harm. It is important that we ask both young people that do and also young people that do not self harm so that we can compare the differences between the groups.** You were chosen as a potential participant for this research because you currently attend either the Young People's Department or the Rowan Centre. Around 100 other young people will be involved in this study.

Do I have to take part?

It is completely up to you whether or not you choose to take part. You can also stop taking part at any time without giving a reason. You will not be affected in any way if you decide not to take part.

What will happen to me if I do take part?

The research will take place between February 2006 and August 2006. You will be asked to complete four separate questionnaires. These questionnaires should take no longer than 30 - 45 minutes in total to complete. The researcher will offer you a set appointment time with them at the Young People's Department or the Rowan Centre to complete the questionnaires. This appointment time will be separate from any other appointments you have at the Young People's Department or the Rowan Centre. One of these questionnaires asks about deliberate self harm. The second questionnaire asks about how satisfied you are about different areas in your life such as friendships, money and school or work. The third questionnaire asks about your feelings about relationships with different people. The fourth questionnaire asks about your current mood and emotions.

Will my taking part in this research project be kept confidential? Who will see what I put in the questionnaires?

The health care professional that you see at the Young People's Department or the Rowan Centre will be informed that you are taking part in the study. You must also consent to your GP being informed that you are participating in the study. The information that you give in your answers in the questionnaire will remain completely confidential. No-one but the researchers will see this. ***However, if you admit that you do currently self harm, or the questionnaires that you or your parents complete indicate that you may have other mental health difficulties, and you are NOT currently receiving help / advice from a health care professional regarding this, your GP will be informed so that he or she can arrange for you to get access to help if you want it.***

What are the possible benefits of taking part?

There are no individual benefits for taking part in the study, however, the information that we get might help young people who self harm in the future.

Who has reviewed the study?

Before any research goes ahead, it has to be checked by an Ethics Committee. They make sure that the research is ok to do. This study has been checked by the Grampian Ethics Committee.

What if something goes wrong?

One of the questionnaires you will be asked to complete asks about deliberate self harm and some people might find this upsetting. If completing the questionnaires raises important issues that you feel that you need help with, we can help put you in touch with appropriate sources of help. If you are unhappy about what happens, you can make a complaint by following the normal NHS complaints procedure.

What will happen to the results of the research study?

The study will be written up as part of Rachael Smith's Doctorate in Clinical Psychology at the University of Edinburgh, and submitted for publication in a Psychology journal. You can be sent a summary of the results if you wish.

I want to know more? Contact details.

Please feel free to contact the researchers who will be happy to answer any other questions you may have.

Ms Rachael Smith (Principle Researcher)
Trainee Clinical Psychologist
The Young People's Department,
Lower Garden Villa,
Royal Cornhill Hospital,
Aberdeen,
AB25 2ZH.

Telephone: (01224) 557268
E-mail: rachael.smith@nhs.net .

Dr Lynne Taylor
Chartered Clinical Psychologist
The Young People's Department,
Lower Garden Villa,
Royal Cornhill Hospital,
Aberdeen,
AB25 2ZH

Telephone: (01224) 557268
E.mail: Lynne.Taylor@gpct.grampian.scot.nhs.uk

This information sheet is yours to keep. If you agree to take part you will be required to sign a consent form which you will also be given a copy of.

Thank-you for taking the time to read this and considering taking part.

Appendix 3
Participant Consent Form

Young People's Department
Lower Garden Villa
Royal Cornhill Hospital
Cornhill Road
Aberdeen
AB25 2ZH
Tel: 01224 557268

NHS Grampian

Patient Identification Number:

CONSENT FORM

Study: *The Relationship between Attachment Style, Quality of Life and Deliberate Self Harm in Adolescence.*

Main Researchers: *Ms Rachael Smith (Trainee Clinical Psychologist).*
Dr Lynne Taylor (Chartered Clinical Psychologist).

PLEASE INITIAL BOX

1. I confirm that I have read about this study and that I understood the participant information sheet. ☐
2. I have had the opportunity to consider the information, and have been given the chance to contact Ms Rachael Smith to ask any questions I may have. ☐
3. I have asked all the questions that I want and have had my questions answered in a way that I understand. ☐
4. I understand that I do not have to take part in this study and that I am free to change my mind and stop at any time without giving any reason. ☐
5. I agree to my GP being informed that I am taking part in the study. ☐
6. **I agree to the researchers informing my GP should any health problems arise. This would allow me to be offered access to appropriate help.** ☐
7. I am happy to take part in the above study. ☐

Your Name: _____

Your GP's Name and Medical Practice: _____

_____

Your Signature: _____
Date: _____

****

Researcher's Name: *Ms Rachael Smith* *Date:* _____
Researcher's Signature: _____

Please return one copy of this form and keep one for yourself.

Appendix 4
Parental Invitation Letter

NHS
Grampian

Young People's Department
Lower Garden Villa
Royal Cornhill Hospital
Cornhill Road
Aberdeen
AB25 2ZH

Telephone (01224) 557268

Dear

I would like to invite you and your son / daughter / the young person currently in your care to consider taking part in a research study currently being undertaken at the Young People's Department / Rowan Centre to try to find out more about the reasons why some young people deliberately harm themselves. Because your son / daughter / the young person currently in your care is under eighteen years of age, your consent is required for them to take part in the research. I have also sent your son / daughter / the young person currently in your care an invitation to take part in the research along with an information sheet and a consent form.

Before you and your son / daughter / the young person currently in your care decide if you want to take part in the research, it is important to understand why the research is being done, and what it will involve for you and the young person. I have enclosed an information sheet about the research study and a consent form. Please read this information sheet carefully. Talk about it with your family and friends if you want to. If you have any questions about the research, please do not hesitate to contact **the principle investigator, Ms Rachael Smith. Ms Smith can** be contacted by telephone on (01224) 557268 or by e-mail on rachael.smith@nhs.net.

Deciding not to take part in the research will have no adverse effects on you or on your son's / daughter's / the young person currently in your care's appointments at the Young People's Department / Rowan Centre.

If you and your son / daughter / the young person currently in your care are happy to take part in the research study, please inform **me** at their next appointment at either the Young People's Department or the Rowan Centre. I will then arrange for the researcher to contact you. Many thanks for considering taking part.

Yours Sincerely,

(Insert name of therapist currently seeing young person)
(Insert Discipline)
Young People's Department / Rowan Centre

Appendix 5a
Parental Information Sheet (Group A)

Young People's Department
Lower Garden Villa
Royal Cornhill Hospital
Cornhill Road
Aberdeen
AB25 2ZH
Tel: 01224 557268

NHS Grampian

INFORMATION SHEET FOR PARENTS / GUARDIAN'S

Study Title: Deliberate Self Harm in Young People.

Invitation to take part in a research project

Your son / daughter / the young person that you currently care for is being invited to take part in a research project to try to find out more about the reasons why some young people deliberately harm themselves. Because your son / daughter / the young person that you currently care for is under eighteen years old, your consent is required for them to take part in this study. Before you decide whether or not you want your son / daughter / the young person currently in your care to take part in the research, it is important to understand why the research is being done, and what it will involve for you and the young person. Please read this information sheet carefully. Talk about it with the young person and any other individual that you want to.

Thank-you for reading this.

Why are we doing this research? Why is it important?

It is estimated that as many as 1 in every 7 young people aged 12 - 18 may deliberately harm themselves. Different types of deliberate self harm include cutting, scratching, hitting or burning ones own skin, or taking an overdose of drugs or alcohol. At the moment very little is known about the reasons why some young people harm themselves in these ways. By comparing young people who do self harm with young people who do not self harm we hope to find out some of the differences between the two groups. We hope that finding out more about the reasons why some young people self harm will lead to better help being available for these young people, and their families.

What exactly is the research trying to find out?

The research aims to investigate whether self harm in young people is related to:

1. How happy the young person is about different things in their life like school and money (known as their *"perceived quality of life"*).
2. The young person's view of their own relationships with others, for example how much they can trust or depend on other people (known as *"attachment style")*

Who is doing the research?

The research is being carried out by Ms Rachael Smith, Trainee Clinical Psychologist at the Young People's Department, as part of her qualification of Doctorate in Clinical Psychology at the University of Edinburgh. Dr Lynne Taylor, chartered Clinical Psychologist at the Young People's Department in Aberdeen and Dr Sean Harper, Clinical Psychologist in NHS Lothian and Academic at the University of Edinburgh will oversee the research.

Why has my son / daughter / the young person that I currently care for been asked to take part?

Your son / daughter / the young person that you currently care for has been asked to take part because they are currently a young person. They were chosen as a potential participant for this research because they currently attend either the Young People's Department in Aberdeen or the Rowan Centre in Elgin. Around 100 other young people will be asked to become involved in this study.

Do they have to take part?

It is completely up to you and / or the young person whether or not they choose to take part. You and / or the young person can also stop taking part at any time without giving a reason. You and the young person will not be affected in any way if you decide not to take part. It is important to stress that a decision not to take part in the research will not in any way impact on the current help the young person is currently receiving from the Young People's Department or the Rowan Centre.

What will happen to my son / daughter / the young person that I currently care for if I do agree for them to take part?

The research will take place between February 2006 and August 2006. The young person will be asked to complete four separate questionnaires. These questionnaires should take no longer than 30 - 45 minutes in total to complete. The researcher will offer the young person a set appointment time with them at the Young People's Department in Aberdeen or the Rowan Centre in Elgin (depending on which is best for you and the young person) to complete the questionnaires. This appointment time will be separate from any other appointments the young person may have at the Young People's Department or the Rowan Centre. One of these questionnaires asks about deliberate self harm. The second questionnaire asks about how satisfied the young person is about different areas in their life such as friendships, money and school or work. The third questionnaire asks about the young person's feelings about relationships with different people. The fourth questionnaire asks about the young person's current mood and emotions.

Do I have to do anything?

As the young person's parent / guardian, you will also be asked to complete a consent form and send this back to the researcher.

Will taking part in this research project be kept confidential? Who will see what the young person puts in the questionnaires?

The young person's GP and the health care professional that the young person sees at the Young People's Department or the Rowan Centre will be informed that the young person is taking part in the study. The information that the young person gives in their answers in the questionnaires will remain completely confidential. No-one but the researchers will see this. ***However, if the young person admits that they do currently self harm, or questionnaires indicate that they may have other mental health difficulties, and they are NOT currently receiving help / advice from a health care professional regarding this, their GP will be informed so that he or she can arrange for them to get access to help if they want it.***

What are the possible benefits of taking part?

There are no individual benefits for taking part in the study, however, the information that we get might help young people who self harm in the future.

Who has reviewed the study?

Before any research goes ahead, it has to be checked by an Ethics Committee. They make sure that the research is ok to do. This study has been checked by the Grampian Ethics Committee.

What if something goes wrong?

One of the questionnaires that the young person will be asked to complete asks about deliberate self harm and some people might find this upsetting. If completing the questionnaires raises important issues that the young person feels that they need help with, we can help put you and them in touch with appropriate sources of help. The researcher will be present when the young person completes the questionnaires. If you are unhappy in any way about what happens, you can make a complaint by following the normal NHS complaints procedure.

What will happen to the results of the research study?

The study will be written up as part of Rachael Smith's Doctorate in Clinical Psychology at the University of Edinburgh, and submitted for publication in a Psychology journal. You can be sent a summary of the results if you wish.

I want to know more? Contact details.

Please feel free to contact the researchers who will be happy to answer any other questions you may have.

Ms Rachael Smith (Principle Researcher)
Trainee Clinical Psychologist
The Young People's Department,
Lower Garden Villa,
Royal Cornhill Hospital,
Aberdeen,
AB25 2ZH.

Telephone: (01224) 557268
E-mail: rachael.smith@nhs.net .

Dr Lynne Taylor
Chartered Clinical Psychologist
The Young People's Department,
Lower Garden Villa,
Royal Cornhill Hospital,
Aberdeen,
AB25 2ZH

Telephone: (01224) 557268
E.mail: Lynne.Taylor@gpct.grampian.scot.nhs.uk

This information sheet is yours to keep. If you agree to the young person taking part you will be required to sign a consent form which you will also be given a copy of.

Thank-you for taking the time to read this and considering taking part.

Appendix 5b
Parental Information Sheet (Group B)

Young People's Department
Lower Garden Villa
Royal Cornhill Hospital
Cornhill Road
Aberdeen
AB25 2ZH
Tel: 01224 557268

NHS Grampian

INFORMATION SHEET FOR PARENTS / GUARDIAN'S

Study Title: Deliberate Self Harm in Young People.

Invitation to take part in a research project

Your son / daughter / the young person that you currently care for is being invited to take part in a research project to try to find out more about the reasons why some young people deliberately harm themselves. Because your son / daughter / the young person that you currently care for is under eighteen years old, your consent is required for them to take part in this study. Before you decide whether or not you want your son / daughter / the young person currently in your care to take part in the research, it is important to understand why the research is being done, and what it will involve for you and the young person. Please read this information sheet carefully. Talk about it with the young person and any other individual that you want to.

Thank-you for reading this.

Why are we doing this research? Why is it important?

It is estimated that as many as 1 in every 7 young people aged 12 - 18 may deliberately harm themselves. Different types of deliberate self harm include cutting, scratching, hitting or burning ones own skin, or taking an overdose of drugs or alcohol. At the moment very little is known about the reasons why some young people harm themselves in these ways. By comparing young people who do self harm with young people who do not self harm we hope to find out some of the differences between the two groups. We hope that finding out more about the reasons why some young people self harm will lead to better help being available for these young people, and their families.

What exactly is the research trying to find out?

The research aims to investigate whether self harm in young people is related to:

1. How happy the young person is about different things in their life like school and money (known as their *"perceived quality of life"*).
2. The young person's view of their own relationships with others, for example how much they can trust or depend on other people (known as *"attachment style")*

Who is doing the research?

The research is being carried out by Ms Rachael Smith, Trainee Clinical Psychologist at the Young People's Department, as part of her qualification of Doctorate in Clinical Psychology at the University of Edinburgh. Dr Lynne Taylor, chartered Clinical Psychologist at the Young People's Department in Aberdeen and Dr Sean Harper, Clinical Psychologist in NHS Lothian and Academic at the University of Edinburgh will oversee the research.

Why has my son / daughter / the young person that I currently care for been asked to take part?

Your son / daughter / the young person that you currently care for has been asked to take part because they are currently a young person. **They may or may not self harm. It is important that we ask both young people that do and also young people that do not self harm so that we can compare the differences between the groups.** They were chosen as a potential participant for this research because they currently attend either the Young People's Department in Aberdeen or the Rowan Centre in Elgin. Around 100 other young people will be asked to become involved in this study.

Do they have to take part?

It is completely up to you and / or the young person whether or not they choose to take part. You and / or the young person can also stop taking part at any time without giving a reason. You and the young person will not be affected in any way if you decide not to take part. It is important to stress that a decision not to take part in the research will not in any way impact on the current help the young person is currently receiving from the Young People's Department or the Rowan Centre.

What will happen to my son / daughter / the young person that I currently care for if I do agree for them to take part?

The research will take place between February 2006 and August 2006. The young person will be asked to complete four separate questionnaires. These questionnaires should take no longer than 30 - 45 minutes in total to complete. The researcher will offer the young person a set appointment time with them at the Young People's Department in Aberdeen or the Rowan Centre in Elgin (depending on which is best for you and the young person) to complete the questionnaires. This appointment time will be separate from any other appointments the young person may have at the Young People's Department or the Rowan Centre. One of these questionnaires asks about deliberate self harm. The second questionnaire asks about how satisfied the young person is about different areas in their life such as friendships, money and school or work. The third questionnaire asks about the young person's feelings about relationships with different people. The fourth questionnaire asks about the young person's current mood and emotions.

Do I have to do anything?

As the young person's parent / guardian, you will also be asked to complete a consent form and send this back to the researcher.

Will taking part in this research project be kept confidential? Who will see what the young person puts in the questionnaires?

The young person's GP and the health care professional that the young person sees at the Young People's Department or the Rowan Centre will be informed that the young person is taking part in the study. The information that the young person gives in their answers in the questionnaires will remain completely confidential. No-one but the researchers will see this. ***However, if the young person admits that they do currently self harm, or questionnaires indicate that they may have other mental health difficulties, and they are NOT currently receiving help / advice from a health care professional regarding this, their GP will be informed so that he or she can arrange for them to get access to help if they want it.***

What are the possible benefits of taking part?

There are no individual benefits for taking part in the study, however, the information that we get might help young people who self harm in the future.

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One of the questionnaires that the young person will be asked to complete asks about deliberate self harm and some people might find this upsetting. If completing the questionnaires raises important issues that the young person feels that they need help with, we can help put you and them in touch with appropriate sources of help. The researcher will be present when the young person completes the questionnaires. If you are unhappy in any way about what happens, you can make a complaint by following the normal NHS complaints procedure.

What will happen to the results of the research study?

The study will be written up as part of Rachael Smith's Doctorate in Clinical Psychology at the University of Edinburgh, and submitted for publication in a Psychology journal. You can be sent a summary of the results if you wish.

I want to know more? Contact details.

Please feel free to contact the researchers who will be happy to answer any other questions you may have.

Ms Rachael Smith (Principle Researcher)
Trainee Clinical Psychologist
The Young People's Department,
Lower Garden Villa,
Royal Cornhill Hospital,
Aberdeen,
AB25 2ZH.

Telephone: (01224) 557268
E-mail: rachael.smith@nhs.net .

Dr Lynne Taylor
Chartered Clinical Psychologist
The Young People's Department,
Lower Garden Villa,
Royal Cornhill Hospital,
Aberdeen,
AB25 2ZH

Telephone: (01224) 557268
E.mail: Lynne.Taylor@gpct.grampian.scot.nhs.uk

This information sheet is yours to keep. If you agree to the young person taking part you will be required to sign a consent form which you will also be given a copy of.

Thank-you for taking the time to read this and considering taking part.

Appendix 6
Parental Consent Form

Young People's Department
Lower Garden Villa
Royal Cornhill Hospital
Cornhill Road
Aberdeen
AB25 2ZH
Tel: 01224 557268

NHS Grampian

Patient Identification Number:

PARENT / GUARDIAN CONSENT FORM

Study: *The Relationship between Attachment Style, Quality of Life and Deliberate Self Harm in Adolescence.*

Main Researchers: *Ms Rachael Smith (Trainee Clinical Psychologist).*
Dr Lynne Taylor (Chartered Clinical Psychologist).

PLEASE INITIAL BOX

1. I confirm that I have read about this study and that I understood the participant information sheet. ☐
2. I have had the opportunity to consider the information, and have been given the chance to contact Ms Rachael Smith to ask any questions I may have. ☐
3. I have asked all the questions that I want and have had my questions answered in a way that I understand. ☐
4. I understand that both I and my son / daughter / young person in my care do not have to take part in this study and that I and my son / daughter / young person in my care are free to change our minds and stop participating at any time without giving any reason. ☐
5. I agree to my son's / daughter's / young person in my care's GP being informed that they are taking part in the study. ☐
6. **I agree to the researchers informing my son's / daughter's / young person in my care's GP should any health problems arise. This would allow them to be offered access to appropriate help.** ☐
7. I am happy for my son / daughter / child in my care and myself to take part in the above study. ☐

Your Name: _____
Your Child's Name _____
Your Child's GP's Name _____
and Medical Practice: _____

Your Signature: _____
Date: _____

****

Researcher's Name: *Ms Rachael Smith* *Date:* _____
Researcher's Signature: _____

Please return one copy of this form and keep one for yourself.

Appendix 7
Relationship Scales Questionnaire / Relationship Questionnaire (RSQ / RQ)

Identification Number: _____ Date: _____

Please read each of the following statements and rate the extent to which you believe each statement best describes your feelings about close relationships by circling the appropriate number.

	Not at all like me		**Somewhat like me**		**Very much like me**
1. I find it difficult to depend on other people.	1	2	3	4	5
2. It is very important to me to feel independent.	1	2	3	4	5
3. I find it easy to get emotionally close to others.	1	2	3	4	5
4. I want to merge completely with another person.	1	2	3	4	5
5. I worry that I will be hurt if I allow myself to become too close to others.	1	2	3	4	5
6. I am comfortable without close emotional relationships.	1	2	3	4	5
7. I am not sure that I can always depend on others to be there when I need them.	1	2	3	4	5
8. I want to be completely emotionally intimate with others.	1	2	3	4	5
9. I worry about being alone.	1	2	3	4	5
10. I am comfortable depending on other people.	1	2	3	4	5
11. I often worry that romantic partners don't really love me.	1	2	3	4	5
12. I find it difficult to trust others completely.	1	2	3	4	5
13. I worry about others getting too close to me.	1	2	3	4	5
14. I want emotionally close relationships.	1	2	3	4	5
15. I am comfortable having other people depend on me.	1	2	3	4	5
16. I worry that others don't value me as much as I value them.	1	2	3	4	5
17. People are never there when you need them.	1	2	3	4	5
18. My desire to merge completely sometimes scares people away.	1	2	3	4	5
19. It is very important to me to feel self-sufficient.	1	2	3	4	5
20. I am nervous when anyone gets too close to me.	1	2	3	4	5

	Not at all like me		Somewhat like me		Very much like me
21. I often worry that romantic partners won't want to stay with me.	1	2	3	4	5
22. I prefer not to have other people depend on me.	1	2	3	4	5
23. I worry about being abandoned.	1	2	3	4	5
24. I am somewhat uncomfortable being close to others.	1	2	3	4	5
25. I find that others are reluctant to get as close as I would like.	1	2	3	4	5
26. I prefer not to depend on others.	1	2	3	4	5
27. I know that others will be there when I need them.	1	2	3	4	5
28. I worry about having others not accept me.	1	2	3	4	5
29. Romantic partners often want me to be closer than I feel comfortable being.	1	2	3	4	5
30. I find it relatively easy to get close to others.	1	2	3	4	5

Identification Number: _____ Date:_____

PLEASE READ THE DIRECTIONS!

*Below are descriptions of four general relationship styles that people often report. Please read each description and **CIRCLE** the letter corresponding to the style that best describes you or is closest to the way you generally are in your close relationships.*

A. It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me.

B. I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.

C. I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.

D. I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

PLEASE TURN OVER

Please re-read each of the relationship styles below (these are the same as on Page 1)

A. It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me.

B. I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.

C. I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.

D. I am comfortable without close emotional relationships, It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

Please circle the appropriate number in the box below to rate each of the above relationship styles according to the extent to which you think each description corresponds to your general relationship style.

	Not at all like me			**Somewhat like me**			**Very much like me**
Style A.	1	2	3	4	5	6	7
Style B.	1	2	3	4	5	6	7
Style C.	1	2	3	4	5	6	7
Style D.	1	2	3	4	5	6	7

Appendix 8
World Health Organisation Quality of Life Short Measure (WHOQOL Bref)

THE WORLD HEALTH ORGANIZATION QUALITY OF LIFE (WHOQOL) –BREF

WHOQOL-BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.**

		Very Poor	Poor	Neither poor nor good	Good	Very Good
1	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very Satisfied
2	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last four weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1
4	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5	How much do you enjoy life?	1	2	3	4	5
6	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7	How well are you able to concentrate?	1	2	3	4	5
8	How safe do you feel in your daily life?	1	2	3	4	5
9	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10	Do you have enough energy for everyday life?	1	2	3	4	5
11	Are you able to accept your bodily appearance?	1	2	3	4	5
12	Have you enough money to meet your needs?	1	2	3	4	5
13	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very Poor	Poor	Neither poor nor good	Good	Very Good
15	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very Satisfied
16	How satisfied are you with your sleep?	1	2	3	4	5
17	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18	How satisfied are you with your capacity for work?	1	2	3	4	5
19	How satisfied are you with yourself?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very Satisfied
20	How satisfied are you with your personal relationships?	1	2	3	4	5
22	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24	How satisfied are you with your access to health services?	1	2	3	4	5
25	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

		Never	Seldom	Quite Often	Very often	Always
26	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1

Do you have any comments about the assessment?

[The following table should be completed after the interview is finished]

		Equations for computing domain scores	Raw score	Transformed scores*	
				4 - 20	0 - 100
27	Domain 1	(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18 + + + + + +	A=	B:	B:
28	Domain 2	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) + + + + +	A=	B:	B:
29	Domain 3	Q20 + Q21 + Q22 + +	A=	B:	B:
30	Domain 4	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25 + + + + + + +	A=	B:	B:

* See Procedures Manual, pages 13-15

Appendix 9
Beck Depression Inventory, Second Edition (BDI-II)

BDI-II

Date:

Name: _____ Marital Status: _____ Age: _____ Sex: _____

Occupation: _____ Education: _____

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad or unhappy that I can't stand it.

2. Pessimism

0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

3. Past Failure

0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

4. Loss of Pleasure

0 I get as much pleasure as I ever did from the things I enjoy.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. Punishment Feelings

0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. Self-Dislike

0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. Self-Criticalness

0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all of my faults.
3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10. Crying

0 I don't cry anymore than I used to.
1 I cry more than I used to.
2 I cry over every little thing.
3 I feel like crying, but I can't.

_____ Subtotal Page 1

Continued on Back

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11. Agitation

0 I am no more restless or wound up than usual.

1 I feel more restless or wound up than usual.

2 I am so restless or agitated that it's hard to stay still.

3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

0 I have not lost interest in other people or activities.

1 I am less interested in other people or things than before.

2 I have lost most of my interest in other people or things.

3 It's hard to get interested in anything.

13. Indecisiveness

0 I make decisions about as well as ever.

1 I find it more difficult to make decisions than usual.

2 I have much greater difficulty in making decisions than I used to.

3 I have trouble making any decisions.

14. Worthlessness

0 I do not feel I am worthless.

1 I don't consider myself as worthwhile and useful as I used to.

2 I feel more worthless as compared to other people.

3 I feel utterly worthless.

15. Loss of Energy

0 I have as much energy as ever.

1 I have less energy than I used to have.

2 I don't have enough energy to do very much.

3 I don't have enough energy to do anything.

16. Changes in Sleeping Pattern

0 I have not experienced any change in my sleeping pattern.

1a I sleep somewhat more than usual.

1b I sleep somewhat less than usual.

2a I sleep a lot more than usual.

2b I sleep a lot less than usual.

3a I sleep most of the day.

3b I wake up 1–2 hours early and can't get back to sleep.

17. Irritability

0 I am no more irritable than usual.

1 I am more irritable than usual.

2 I am much more irritable than usual.

3 I am irritable all the time.

18. Changes in Appetite

0 I have not experienced any change in my appetite.

1a My appetite is somewhat less than usual.

1b My appetite is somewhat greater than usual.

2a My appetite is much less than before.

2b My appetite is much greater than usual.

3a I have no appetite at all.

3b I crave food all the time.

19. Concentration Difficulty

0 I can concentrate as well as ever.

1 I can't concentrate as well as usual.

2 It's hard to keep my mind on anything for very long.

3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

0 I am no more tired or fatigued than usual.

1 I get more tired or fatigued more easily than usual.

2 I am too tired or fatigued to do a lot of the things I used to do.

3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

0 I have not noticed any recent change in my interest in sex.

1 I am less interested in sex than I used to be.

2 I am much less interested in sex now.

3 I have lost interest in sex completely.

8 9 10 11 12 A B C D E

_____ Subtotal Page 2

_____ Subtotal Page 1

_____ Total Score

Appendix 10
Children's Depression Inventory (CDI)

CDI

Item 1

- ☐ I am sad once in a while.
- ☐ I am sad many times.
- ☐ I am sad all the time.

Item 2

- ☐ Nothing will ever work out for me.
- ☐ I am not sure if things will work out for me.
- ☐ Things will work out for me O.K.

Item 3

- ☐ I do most things O.K.
- ☐ I do many things wrong.
- ☐ I do everything wrong.

Item 4

- ☐ I have fun in many things.
- ☐ I have fun in some things.
- ☐ Nothing is fun at all.

Item 5

- ☐ I am bad all the time.
- ☐ I am bad many times.
- ☐ I am bad once in a while.

Item 6

- ☐ I think about bad things happening to me once in a while.
- ☐ I worry that bad things will happen to me.
- ☐ I am sure that terrible things will happen to me.

Item 7

- ☐ I hate myself.
- ☐ I do not like myself.
- ☐ I like myself.

Item 8

- ☐ All bad things are my fault.
- ☐ Many bad things are my fault.
- ☐ Bad things are not usually my fault.

Item 9

- ☐ I do not think about killing myself.
- ☐ I think about killing myself but I would not do it.
- ☐ I want to kill myself.

Item 10

- ☐ I feel like crying every day.
- ☐ I feel like crying many days.
- ☐ I feel like crying once in a while.

Item 11

- ☐ Things bother me all the time.
- ☐ Things bother me many times.
- ☐ Things bother me once in a while.

Item 12

- ☐ I like being with people.
- ☐ I do not like being with people many times.
- ☐ I do not want to be with people at all.

Item 13

- ☐ I cannot make up my mind about things.
- ☐ It is hard to make up my mind about things.
- ☐ I make up my mind about things easily.

Item 14

- ☐ I look O.K.
- ☐ There are some bad things about my looks.
- ☐ I look ugly.

Remember to fill out the other side

Remember, describe how you have been in the past two weeks.....

Item 15

- ☐ I have to push myself all the time to do my schoolwork.
- ☐ I have to push myself many times to do my schoolwork.
- ☐ Doing schoolwork is not a big problem.

Item 16

- ☐ I have trouble sleeping every night.
- ☐ I have trouble sleeping many nights.
- ☐ I sleep pretty well.

Item 17

- ☐ I am tired once in a while.
- ☐ I am tired many days.
- ☐ I am tired all the time.

Item 18

- ☐ Most days I do not feel like eating.
- ☐ Many days I do not feel like eating.
- ☐ I eat pretty well.

Item 19

- ☐ I do not worry about aches and pains.
- ☐ I worry about aches and pains many times.
- ☐ I worry about aches and pains all the time.

Item 20

- ☐ I do not feel alone.
- ☐ I feel alone many times.
- ☐ I feel alone all the time.

Item 21

- ☐ I never have fun at school.
- ☐ I have fun at school only once in a while.
- ☐ I have fun at school many times.

Item 22

- ☐ I have plenty of friends.
- ☐ I have some friends but I wish I had more.
- ☐ I do not have any friends.

Item 23

- ☐ My schoolwork is alright.
- ☐ My schoolwork is not as good as before.
- ☐ I do very badly in subjects I used to be good in

Item 24

- ☐ I can never be as good as other kids.
- ☐ I can be as good as other kids if I want to.
- ☐ I am just as good as other kids.

Item 25

- ☐ Nobody really loves me.
- ☐ I am not sure if anybody loves me.
- ☐ I am sure that somebody loves me.

Item 26

- ☐ I usually do what I am told.
- ☐ I do not do what I am told most times.
- ☐ I never do what I am told.

Item 27

- ☐ I get along with people.
- ☐ I get into fights many times.
- ☐ I get into fights all the time.

MHS

Remember to fill out the other side

Appendix 11
Deliberate Self Harm Questionnaire

NHS Grampian

Patient Identification Number:

Deliberate Self-Harm in Young People

Recent studies suggest that as many as 1 in every 7 young people may deliberately self-harm. Different types of deliberate self harm include cutting, scratching, hitting or burning ones own skin, or taking an overdose of drugs or alcohol, amongst others. Deliberate self harm is defined as a non-fatal act carried out in the young person's knowledge that it was potentially harmful and in the case of drug overdose, that the amount taken was excessive.

Health care professionals can help young people who self harm, but in order to give them the best help possible, it is important to find out about how and why some young people do deliberately harm themselves.

1. Please read the following statements / descriptions and tick the box that best describes whether or not you have done this, and if you have, how often you have done it.

		1 – Never in the last year	2 – A few times in the last year	3 – About once a month	4 – A few times each month	5 – Often - at least once a week
1	Intentionally cut your body.					
2	Intentionally made scratches to or punctured your skin.					
3	Intentionally taken a drug / medication overdose.					
4	Intentionally taken a poisonous or caustic substance.					
5	Intentionally burned or scalded yourself.					
6	Intentionally inflicted blows on yourself / hit yourself					
7	Intentionally bitten yourself.					
8	Intentionally taken an alcohol overdose.					
9	Other (Please describe) ---------- ----------					

2. If you have ticked any of the boxes above indicating that you do deliberately harm yourself, are you currently receiving help regarding this from your GP, a mental health professional (for example a psychologist, psychiatrist or nurse), social worker or school counsellor?

Yes, I'm currently receiving help	No, I'm not currently receiving help

If you have ticked any of the boxes above indicating that you do deliberately self harm, please turn to page 3 and complete the rest of this questionnaire.

If you have ticked NEVER to all of the above, you do NOT need to complete the rest of this questionnaire, many thanks for your help.

3. Please tick whether or not any of the following have happened in the period immediately before you have deliberately harmed yourself?

	Yes	No
1. Had an argument or upset with someone close to you		
2. Had argument or upset with your girlfriend/boyfriend		
3. Had an argument or upset with your friends		
4. Had worries about your own physical health		
5. Had worries about the health or well being of someone close to you		
6. You've drunk too much		
7. You've taken street drugs		
8. Had school work worries		
9. You've felt very isolated or lonely		
10. Something else, please describe _____		

4. Please read the statements below and tick whether they never, occasionally or often apply to you.

	Never	Occasionally	Often
Before injuring myself:			
1. I have an irresistible urge to harm myself			
2. I have an increase in anxiety or panic			
3. I have an increase in anger or frustration			
4. I feel stuck and helpless			
5. I feel sad and depressed			
6. I feel hopeless about the future			
7. I feel numb or cut off from reality			
8. I feel unsupported			

5. Please read the statements below and tick whether they never, occasionally or often apply to you.

	Never	Occasionally	Often
When injuring myself:			
1. I'm in control of what I'm doing			
2. I find it difficult to stop			
Self injuring:			
1. Helps me control my mind when it is racing			
2. It helps me feel relaxed			
3. It helps me feel less depressed			
4. It helps me feel real or awake again			
5. It helps me feel I am in control			
6. I get a 'buzz' from doing it			
7. It helps distract me from my feelings			
8. It stops me from doing something worse			
9. I do it so that I can fit in and belong			
10 I want someone to notice what I am doing			
11 I like being cared for after cutting/self harm			

6. If you can, please describe in your own words why you self-harm?

_____

_____

_____

_____

_____

Many thanks for completing this questionnaire.

Appendix 12a
Ethics Committee Approval Letter (for original application)

NHS
Grampian

Grampian Local Research Ethics Committee (1)
Summerfield House
2 Eday Road
Aberdeen
AB15 6RE

Telephone: 01224 558503
Facsimile: 01224 558609

9 February 2006

Ms Rachael M Smith
Trainee Clinical Psychologist
NHS Grampian
Young People's Department
Lower Garden Villa
Royal Cornhill Hospital
Cornhill Road
ABERDEEN
AB25 2ZH

Dear Ms Smith

Full title of study: **The Relationship between Attachment Style, Quality of Life and Deliberate Self Harm in Adolescence**

REC reference number: **06/S0801/1**

Thank you for your letter of 3 February 2006, responding to the Committee's request for further information on the above research and submitting revised documentation.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out. You are advised to study the conditions carefully, in particular:

Condition 1: Annual Progress Report

Under the Central Office of Research Ethics Committees (COREC) regulations NHS Research Ethics Committees are required to monitor research with a favourable opinion. This is to take the form of an annual progress report which should be submitted to the Grampian Research Ethics Committee 12 months after the date on which the favourable opinion was given. Annual reports should be submitted thereafter until the end of the study.

Points to note:

- The first annual progress report should give the commencement date for the study. This is normally assumed to be the date on which any of the procedures in the protocol are initiated. Should the study not commence within 12 months of approval a written explanation must be provided in the 1st annual progress report.
- Progress reports should be in the format prescribed on the COREC website (www.corec.org.uk/applicants/apply/progress.htm).
- Progress reports must be signed by the Principal Investigator/Chief Investigator.
- Failure to submit a progress report could lead to a suspension of the favourable ethical opinion for the study.
- Please note the Annual Progress Report is a short 3 page form which is extremely easy to complete.

Condition 2: Notification of Study Completion/Termination

Under the Central Office of Research Ethics Committees (COREC) regulations researchers are required to notify the Ethics Committee from which they obtained approval of the conclusion or early termination of a project and to submit a Completion/Termination of Study Report. Researchers should follow the instructions on the COREC website (www.corec.org.uk/applicants/apply/endofproject.htm).

Points to note:

- For most studies the end of a project will be the date of the last visit of the last participant or the completion of any follow-up monitoring and data collection described in the protocol.
- Final analysis of the data and report writing is normally considered to occur after formal declaration of the end of the project.
- A Final Report should be sent to the GREC within 12 months of the end of the project.
- The summary of the final report may be enclosed with the end of study declaration, or sent to the REC subsequently.
- There is no standard format for final reports. As a minimum we should receive details of the end date and information on whether the project achieved its objectives, the main findings and arrangements for publication or dissemination of research, including any feedback to participants.
- Please note the Completion/Termination of Study Report need only be a summary document and should, therefore, be easy to prepare.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
Application	5.0	11 January 2006
Investigator CV		11 January 2006
Investigator CV Lynne Taylor		11 January 2006
Investigator CV Sean Harper		11 January 2006
Protocol	1	11 January 2006
Protocol	2	1 February 2006
Protocol Summary	2	1 February 2006
Covering Letter		3 February 2006
Questionnaire DSMD		
Questionnaire BDI-II		
Questionnaire CDI		
Questionnaire WHOQOL - BREF		
Questionnaire Relationship		
Questionnaire Deliberate Self-Harm in Young People	1	11 January 2006
Letter of invitation to participant Youth/Leisure Club	1	11 January 2006
Letter of invitation to participant Group B	2	1 February 2006
Letter of invitation to participant Group A	2	1 February 2006
Letter of invitation to participant Parent/Guardian Group A	2	1 February 2006
Letter of invitation to participant Parent/Guardian Group B	2	1 February 2006
Letter of invitation to participant Group A	1	11 January 2006
Letter of invitation to participant Group B	1	11 January 2006
Letter of invitation to participant Parent/Guardian Group A	1	11 January 2006
Letter of invitation to participant Parent/Guardian Group B	1	11 January 2006
GP/Consultant Information Sheets	1	11 January 2006
Participant Information Sheet Group B	2	1 February 2006
Participant Information Sheet Group A	1	11 January 2006
Participant Information Sheet Group B	1	11 January 2006
Participant Information Sheet Parent Group A	1	11 January 2006
Participant Information Sheet Parent Group B	1	11 January 2006
Participant Information Sheet	2	1 February 2006
Participant Information Sheet Youth Club Group B	1	11 January 2006
Participant Consent Form	2	1 February 2006
Participant Consent Form Parent/Guardian	2	1 February 2006
Participant Consent Form	1	11 January 2006
Participant Consent Form Parent/Guardian	1	11 January 2006
Response to Request for Further Information		6 February 2006
Summary of Research Protocol	1	11 January 2006
Reference from Dr Lynne Taylor		3 February 2006
Certificate of Indemnity		22 August 2006
GP Letter 1	1	11 January 2006
GP Letter 2	1	11 January 2006

Research governance approval

The study should not commence at any NHS site until the local Principal Investigator has obtained final research governance approval from the R&D Department for the relevant NHS care organisation.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

06/S0801/1	Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely

Dr Melvin Morrison
Chair

Enclosures: Standard approval conditions
Site approval form

Copy to: Clinical & Health Psychology, School of Health & Social Science, University of Edinburgh, Medical School, Teviot Place, Edinburgh

Grampian Local Research Ethics Committee (1)

LIST OF SITES WITH A FAVOURABLE ETHICAL OPINION

For all studies requiring site-specific assessment, this form is issued by the main REC to the Chief Investigator and sponsor with the favourable opinion letter and following subsequent notifications from site assessors. For issue 2 onwards, all sites with a favourable opinion are listed, adding the new sites approved.

REC reference number:	06/S0801/1	**Issue number:**	1	**Date of issue:**	09 February 2006
Chief Investigator:	Ms Rachael M Smith				
Full title of study:	The Relationship between Attachment Style, Quality of Life and Deliberate Self Harm in Adolescence				

This study was given a favourable ethical opinion by Grampian Local Research Ethics Committee (1) on 09 February 2006. The favourable opinion is extended to each of the sites listed below. The research may commence at each NHS site when management approval from the relevant NHS care organisation has been confirmed.

Principal Investigator	*Post*	*Research site*	*Site assessor*	*Date of favourable opinion for this site*	*Notes (1)*
Ms Rachael M Smith	Trainee Clinical Psychologist	NHS Grampian	Grampian Research Ethics Committee (1)	9 February 2006	

Approved by the Chair on behalf of the REC:

Carol Bain ..... *(Signature of Chair/Administrator)*
(delete as applicable)

.....Carol Bain..... (Name)

(1) *The notes column may be used by the main REC to record the early closure or withdrawal of a site (where notified by the Chief Investigator or sponsor), the suspension of termination of the favourable opinion for an individual site, or any other relevant development. The date should be recorded.*

Appendix 12b
Ethics Committee Rejection Letter (for later substantial amendment)

SL33 Unfavourable opinion of amendment
Version 3, June 2005

NHS
Grampian

Grampian Local Research Ethics Committee (1)
Summerfield House
2 Eday Road
Aberdeen
AB15 6RE

Telephone: 01224 558503
Facsimile: 01224 558609

31 May 2006

Ms Rachael Smith
Trainee Clinical Psychologist
Young People's Dept
Lower Garden Villa
Royal Cornhill Hospital
Cornhill Road
Aberdeen, AB25 2ZH

Dear Ms Smith

Study title: **The relationship between attachment style, quality of life and deliberate self harm in adolescence**
REC reference: **06/S0801/1**

The above amendment was reviewed by the Sub-Committee of the Research Ethics Committee on 30 May 2006.

Ethical opinion

The members of the Committee present decided that it could not give a favourable ethical opinion of the amendment, for the following reasons:

- The researcher should not call a potential participant. Their lead clinician can do this if they wish. The Committee suggest resending the original letter to those who have not replied.

- The committee were not sure how the parents/guardian's permission will be sought from the Penumbra project. Will they be given the information sheet via the young person, or will a letter be sent directly to the parents as in the original application.

I regret to inform you that the amendment is therefore not approved. The study should continue in accordance with the documentation previously approved by the Committee.

Modifying the amendment

You may modify or adapt the amendment, taking into account the Committee's concerns. Modified amendments should be submitted on the standard notice of amendment form. The form should indicate that it is a modification of the above amendment.

A revised notice of amendment must be submitted at least 14 days before you plan to implement the amendment. The Committee will then have 14 days from the date of receiving the notice in which to notify you that the amendment is rejected, otherwise the amendment may be implemented.

Documents reviewed

The documents reviewed at the meeting were:

- Notice of substantial amendment (First amendment – 10 May 2006)
- Participant Invitation Letter (Group A), Version 3, 10 May 2006
- Parent / Guardian Invitation Letter (Group A) Version 3, 10 May 2006
- Participant Information Sheet, Version 2, 10 May 2006.

Statement of compliance

This Committee is recognised by the United Kingdom Ethics Committee Authority under the Medicines for Human Use (Clinical Trials) Regulations 2004, and is authorised to carry out the ethical review of clinical trials of investigational medicinal products.

The Committee is fully compliant with the Regulations as they relate to ethics committees and the conditions and principles of good clinical practice.

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

06/S0801/1	Please quote this number on all correspondence

Yours sincerely

Dr Julie Kelly
Ethics Co-ordinator

Appendix 13
Research and Development Approval letter

Research and Development

Foresterhill House Annexe
Foresterhill
Aberdeen
AB25 2ZB

NHS
Grampian

Ms R. Smith
Trainee Clinical Psychologist
NHS Grampian
Young Peoples Dept
Lower Garden Villa
Royal Cornhill Hospital
Aberdeen AB25 2ZH

Date 24/02/06
Your Ref 06/S0801/001
Our Ref

Enquiries to
Extension 53846
Direct Line 01224 553846
Email louise.milne2@nhs.net

Dear Rachael

Re: The relationship between attachment style, quality of life and deliberate self harm in adolescence.

Thank you very much for sending us a full copy of the ethics application for the above named study including a signed copy of the R&D Application Form and other relevant paperwork.

I am pleased to confirm that the study is now registered with the Research and Development Office in NHS Grampian and has approval to proceed locally providing full Ethical Approval has been obtained.

Please note that if there are any other researchers taking part that are not on the original Ethics application, please advise the Ethics Committee in writing and copy the letter to our office so that we may amend our records and assess any additional costs.

Wishing you every success with your research.

Yours sincerely

Louise Milne
Data Co-ordinator

Appendix 14
Results – correlation matrix

Correlations

		Depressive symptoms	Total WHOQOL Bref Score	WHOQOL Bref domain 1 score	WHOQOL Bref domain 2 score	WHOQOL Bref domain 3 score	WHOQOL Bref domain 4 score
Depressive symptoms	Pearson Correlation	1	-.745(**)	-.679(**)	-.758(**)	-.567(**)	-.643(**)
	Sig. (2-tailed)	.	.000	.000	.000	.000	.000
	N	38	38	38	38	38	38
Total WHOQOL Bref Score	Pearson Correlation	-.745(**)	1	.931(**)	.927(**)	.783(**)	.935(**)
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000
	N	38	38	38	38	38	38
WHOQOL Bref domain 1 score	Pearson Correlation	-.679(**)	.931(**)	1	.825(**)	.711(**)	.811(**)
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000
	N	38	38	38	38	38	38
WHOQOL Bref domain 2 score	Pearson Correlation	-.758(**)	.927(**)	.825(**)	1	.639(**)	.838(**)
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000
	N	38	38	38	38	38	38
WHOQOL Bref domain 3 score	Pearson Correlation	-.567(**)	.783(**)	.711(**)	.639(**)	1	.688(**)
	Sig. (2-tailed)	.000	.000	.000	.000	.	.000
	N	38	38	38	38	38	38
WHOQOL Bref domain 4 score	Pearson Correlation	-.643(**)	.935(**)	.811(**)	.838(**)	.688(**)	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.
	N	38	38	38	38	38	38

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).